time permits, a trial of this remedy is advisable. As to the merits of the naphthol paste recommended by Caposi (naphth. 5 : starch-flour 100, applied as a paste daily, for three days in succession, until a brown eschar is formed), or of the collodion of mercurial sublimate proposed by the same writer and by Boeck, experience does not justify us in offering an opinion.

DEEP-SPREADING INFLAMMATIONS OF THE SKIN.

A. ACUTE DEEP-SPREADING INFLAMMATIONS

BY

PROF. E. GEBER,

IN KLAUSENBERG.

ERYSIPELAS.

ERYSIPELAS has already received detailed consideration in another part of this handbook (Vol. II.). The subject is again presented, on account of its natural connection with the other affections of the skin. It is our purpose to define, in a concise manner, the present doctrine of erysipelas from the dermatological standpoint.

I will remind you at the start that many very valuable doctrinal views, which modern investigations have proven to be correct or acceptable, had been expressed by the old Greeks, Latins, Arabians, and by the writers of subsequent centuries. Nevertheless, accurate as are the descriptions of our predecessors, and much as they testify to conscientious observation at the sick-bed, their standpoints are not always the results of objective examination, inasmuch as they often, even in essential points, confound cause and effect and the like with one another. Among the number of false conclusions, I will point merely to the following illustration. Because the disease often begins with gastric symptoms, the conditions producing these were formerly regarded as producers of the erysipelas. To-day we are far from assuming that the disturbed secretion of bile, the thin or acrid, spoiled, warm humors, the interference with the functions of the intestinal tract, or the ingestion of articles of food which are digested with difficulty, and the like will produce erysipelas. In like manner, we may regard as dispelled the erroneous conception that the disease is the result of suppressed bloody and mucous fluxes, disturbed perspiration, and violent mental excitement. Nor can scarcely any one be found among us who regards it as a deposit—apostasis—upon the surface. which Nature employs for the excretion of a dross, a materia peccans.

On the other hand, there are a number of prominent medical clinicians who have retained so much of tradition that they assume an autochthonous, medical erysipelas, developing from general infection, and place this as E. spontaneum, idiopathicum, or verum in opposition to E. chirurg., traumaticum, spurium, or nothum, which originates from an injury.

But since an impetus has been given to the observation of the local conditions in every outbreak of erysipelas, the proofs are increasing that the disease requires a point of entrance, which has been produced in a traumatic manner, and that thence it obtains its further spread; and that when investigation in this direction proves barren of results, this is due to a slight injury—erosion—to the lesion remaining concealed or unnoticed.

My observations render such conclusions very probable. Among the 72 cases of erysipelas which occurred in this clinic, 8 occurred during their stay in the hospital, after buboes and ulcera cruris, varicos. and specifica; 64 developed outside. Among these the starting-point of the disease in a local affection could be demonstrated 51 times with certainty; 6 times no decision could be reached, as the injuries of the skin and caries of the teeth did not coincide in point of time with the erysipelas, and in 5 cases no explanation could be offered.

Furthermore, as I find in the course of erysipelas no plausible reason for the assumption of two independent forms, I, for my part, do not hesitate to recognize but one variety, which is due to a solution of continuity as an exciting cause, *i. e.*, traumatic erysipelas. Whether, however, there is not a spontaneous idiopathic erysipelas of the internal organs, in the sense which Hippocrates first expressed with regard to wandering pneumonia, and has since been described by Virchow, Friedreich, and others, I am unable to determine on account of the lack of suitable material.

Accordingly, I mean by the term erysipelas of the skin a, on the one hand, general intoxication, and on the other hand, acute progressing inflammation with predominant serous infiltration of the tissues, associated with febrile movement, and produced as the result of local infectious action; after desquamation of the epidermis this terminates constantly in a restitutio ad integrum.

Symptoms and Course.—Its first symptoms: tired feeling in the limbs, anorexia, headache, burning or pricking pain in the affected part, are manifested either before or with the appearance of the erysipelas, and the disturbances on the part of the general condition and those of the lesion may occur either to an equal extent, or those of the one may predominate over those of the other. Usually, however, the patient only becomes conscious of the significance of his condition when, in addition to the unpleasant local sensations, he is attacked by a chill. There is no objection to regarding these processes as a prodromal stage, as the attack is indeed introduced by them.

The symptoms which now make their appearance are those of an undoubted toxæmia and of an inflammatory irritation in the part affected. The first is manifested by the relatively high fever, which is out of proportion to the local affection, by the gastric symptoms, coated tongue, anorexia, pain in the stomach, nausea, vomiting, constipation, or diarrhœa, by irritation of the cerebro-spinal system, headache, delirium, coma, hallucinations, tremor, and the possibly associated disturbances of the circulatory, respiratory, and other organs. With regard to the affection of the skin, we notice a rosy to blood-red spot, which grows pale under the pressure of the finger, and has either zigzag or uniform sharply defined borders; it starts either from a trifling excoriation, an insignificant pustule, or from a part which has healed, and in not very rare cases, from a spot which, in view of its remoteness from an inflammatory focus, may simulate a spontaneous development.

The erysipelatous patch is characterized by its striking sensitiveness, serous swelling, tension of the skin, shining exterior, and the tendency to superficial spread.

If the transudation occurs in large amount, the œdematous swelling becomes greater, and the elevations and depressions of the skin appear more distinctly. This

becomes especially noticeable in cicatricial spots, inasmuch as they appear elevated and markedly swollen. If the quantity of exuded fluid increases to a considerable degree, it terminates in separation of the epidermis or the formation of vesicles; after these have existed for some time, the contents become cloudy or change into crusts. These phenomena have no special significance apart from those vesicles with sero-bloody contents which occur in E. gangrenosum.

In the mildest cases, the erysipelas terminates with a single outbreak of this character. The redness of the skin first grows pale at the periphery, and then over the entire area; the fever ceases in the next few hours, and the patient feels well in one to three days. In moderate cases, the extension of the local phenomena continues for a few days, then stands still, and retrogression occurs, so that, at the end of a week, the desquamating epidermis alone reveals the last traces of the erysipelas. If the erysipelas occurs in a more severe form, the processes in the skin become important, the subcontinuous fever continues for some time, or even increases, and the general condition is considerably disturbed. We must, however, abstain from a detailed consideration of all the disturbances of the general condition. A part of them will be considered later, so far as it is necessary to a comprehension of the whole, and as for the rest, we refer to Vol. II. of this handbook.

But we will devote a few words to the relation of the fever to erysipelas, because it is very often of great importance with regard to the termination, is its constant accompaniment, and generally runs parallel with it. It announces the erysipelas at its appearance, and ceases only with the termination of the disease. Beginning with a temperature which often rises to 40°, it generally remains stationary for some time, according to the processes in the skin; with the cessation of the local phenomena, it becomes subnormal, or if the former increase, it may rise exceptionally even to 42° (Wunderlich). In erysipelas running a regular course, the fever shows morning remissions, and reaches its former height during evening and night. It becomes irregular when the process leaves its normal course, as in erysipelas migrans, and that form, E. diuturnum, which is more prolonged. Then it may happen that an abnormally high increase of temperature is followed by a sudden fall, and soon afterwards by variable temperatures of 38° to 40°. If the fever ceases entirely, the other concomitant symptoms also grow less, and euphoria occurs, introduced by a profuse secretion of perspiration. If the fever does not diminish after a number (eight) of days, the bad symptoms will persist uninterruptedly, and we must expect the occurrence of complications.

In otherwise healthy individuals, the pulse conforms equally to the local disturbances. It is strong, full, and frequent so long as the course of the erysipelas is turbulent but normal; it becomes small, feeble, dicrotic when the process is irregular and cardiac complications are present.

The spread of the erysipelas occurs, as a rule, inasmuch as the zigzag, tongue-shaped prolongations of the sharply-defined borders seize upon new tissue uninterruptedly and on all sides. This occurs sometimes slowly (1–3 cm. daily), sometimes more rapidly (up to 30 cm. daily), and affects either large parts of the body or the entire integument, and it sometimes happens in cases of unusual extension that previously involved localities again become affected, and thus the subject of a second or third eruption, which may prolong the duration of the disease to three to six weeks.

If the borders finally become obliterated in a diffuse manner, there is hope of the occurrence of a standstill. But it may happen that, in cases which had already undergone retrogression, the hidden glimmering fire is suddenly fanned into a flame without

any known cause, and the reappearance of a chill furnishes the signal of further trouble. It cannot be predicted at the start what form the erysipelas will assume in its subsequent course. The mildest grades are often followed by the most severe, and *vice versa.* In like manner, we are generally unable to predict the direction in which the erysipelas will spread. As the observations at the sick-bed teach, however, a certain regularity appears to be imposed upon it in so far as it accommodates itself according to the cleavage of the skin determined by Langer, and is partly modified, partly stopped at the nodular points. Therefore, no serrations are observed upon the hairy scalp, the palms of the hands, and soles of the feet, therefore the chin, base of the skull, and Poupart's ligament are commonly avoided by erysipelas, and for this reason a slow progress is observed at the condyles of the joints, the crests of the ilia, etc.

Exceptionally, erysipelas may make smaller or greater leaps. If the part which has remained unaffected between the individual erysipelatous spots is small, no significance is attached to it. But matters assume a different aspect if the erysipelas, for example, has been situated on the trunk and then appears suddenly on the forearm or leg. Then it must be earnestly considered whether both foci belong to one and the same source or not. If it can be proven that the process has extended to remote parts, leaving the intermediate parts free, it is possible that in the diffusion of the deleterious substance, some parts of the tissue will allow it pass through them without being injured, while others react more vigorously and thus become erysipelatous. For the present, however, the statement advanced by Volkmann, that this remote appearance of an erysipelatous patch is the result of a metastatic deposit, cannot be denied. This form is known as E. erraticum. If it is proven, on the other hand, that separate erysipelatous foci are present in two or more spots, we have to deal with an E. duplex, triplex, and multiplex.

If intervals of complete apyrexia and retrogression of the inflamed tissues occur between the eruptions which follow one another, the erysipelas is a relapsing one and, if it recurs a number of times in the parts in question, an habitual one. The latter form acquires increased interest from the fact that its products themselves constitute the material for its future recurrence, *i. e.,* without any special exciting cause, and for changes in the tissues. The significance of such an habitual erysipelas to the patient is evident from the fact that he is not alone ignorant of when he will be affected by an attack, but to his discomfiture finds them increasing from year to year, not alone in frequency (nine to twelve a year), but also in severity.

Fortunately such unfavorable terminations are rare, despite the fact that individuals who have once suffered from erysipelas are especially predisposed to it. As a rule, the inflammation of the skin disappears completely, the exudation is absorbed, the normal color returns, the swelling of the lymphatic glands of the affected parts disappears, and after the branny or membranous desquamation of the epidermis[1] has ceased, restitution follows in the strictest sense.

Apart from the variations mentioned in the course of erysipelas, there is an entire series of noteworthy factors which are associated mainly with the local conditions. For the sake of completeness, some of them will here be considered very briefly.

Erysipelas of the Face.—Facial erysipelas which, as is well known, is the most frequent form, may have its starting-point in any part of the face. But experience teaches that it arises most commonly as the result of catarrhal, ulcerative, and other affections of

[1] Only recently, as a companion piece to George Wilson's observations, I have seen the epidermis of the foot desquamated literally as a whole after a severe erysipelas of the leg.

the nasal mucous membrane, syphilitic or scrofulous caries of the nasal bone, ulcerative processes of the pharynx, lupus, syphilis, etc., of the alæ nasi, carious teeth, many forms of otorrhœa, conjunctival catarrh, and morbid changes of the Meibomian glands. We must regard it as a special local phenomenon that, on account of the loose, large-meshed tissue of the cutis, a large quantity of transudation accumulates more readily in the stroma, on account of which the expression of the face appears frightful, and the process in general more violent. If the face is affected in its entirety, the eyelids are very œdematous and closed, and the skin in the vicinity is eroded or eczematous on account of the flow of tears. The nose becomes shining, markedly swollen, and painful, the nostrils dry, often impervious on account of crusts. The lips are thickened to twice their size, the conchæ are very tense, stiff, shining, and bright red ; the integument of the cheeks and temples is infiltrated to a considerable extent, and often presents vesicles. Facial erysipelas usually ends favorably, even the destructive process which has occurred in the eyelids on account of the infiltration usually heals without any disfiguring cicatrices. Now and then inflammation and suppuration of the parotid or the neighboring glands occur, but have no further consequences apart from the prolonged duration. Facial erysipelas only attains special significance from its spread to the scalp or from the orbits to the meninges.

Erysipelas of the Scalp.—If erysipelas affects the hairy part of the head, this is manifested from the beginning by the dull and later more acute, but always constant headache, which is due not alone to the tension of the cutis and galea aponeurotica by the exudation, but also to the change in the amount of blood in the cerebral vessels.

In very irritable individuals, insomnia, delirium, etc., may occur even in moderate grades of erysipelas, and when the fever is by no means high. But as soon as the erysipelas subsides, the patients grow quiet, consciousness returns undisturbed, the swelling of the scalp disappears quite rapidly, and an obstinate seborrhœa alone remains, associated with defluvium capillorum extending over the entire scalp, and which is usually the result of a serous infiltration. As a rule, some hairs begin to grow while the others are falling out.

If the erysipelas and high fever continue undiminished, violent cerebral symptoms appear very soon ; the pulse becomes slow (60) or rapid, the pupils react slowly or become almost immovable, and the sensorium is usually dull. Maniacal attacks, violent jactitations occur, and are followed commonly by coma and sopor. The patient lies in an apathetic condition, mutters incoherently, and dies with symptoms of convulsions, gnashing of the teeth, muscular tremor and the like, if no change for the better occurs within eight to ten days. Purulent inflammations of the brain and its membranes, encephalitides, meningitides, purulent phlebitides, metastatic process, and, in general, extension of the erysipelas are found exceptionally, much more rarely than is commonly supposed. In the majority of cases, œdema of the brain is alone observed. To what extent, however, the continued or high fever, the intoxication, the reflex irritability, and the like take part in this process has not been determined hitherto.

On account of this serious condition, erysipelas of the scalp has always been more dreaded, and for this reason even the slightest surgical operation upon this part must be made with the greatest care.

Erysipelas of the Trunk.—This occurs more frequently as the result of extension of the disease than as a primary local affection. In the overwhelming majority of cases, the exciting causes of the latter form are serious operations (removal of the mammary glands in fat individuals), neoplasms undergoing degeneration, fistulous tracts and caries.

of the ribs. In the new-born, it is often observed after the falling off of the umbilical cord. It must always be regarded as a serious disease, on account of the frequent inflammations of the serous membranes (peritonitis, pericarditis, pleurisy) and of the other organs (lungs, heart, intestines, etc.).

Among the forms of erysipelas of the trunk, the following possess a greater amount of interest:

1. *Erysipelas of the Umbilicus,* which occurs almost exclusively in the new-born, is caused usually by all sorts of irritation of the umbilical wound. During puerperal epidemics it occasionally occurs epidemically in foundling asylums and hospitals. It is signalized especially by its wandering character, and the malignancy of its course. At the beginning, an irritated spot is observed upon the umbilicus; upon this an erysipelatous patch of varying size develops, upon the slightest contact with which the infant cries out loudly. Parallel to this condition is the course run by the fever, which is moderate at the onset, but increases with the spread of the process. If a standstill of the erysipelas does not occur within a few days, the life of the child is seriously endangered. The children die within three to twelve days from loss of vitality, anæmia, etc., on account of the continued fever, the later suppuration of the tissues, and the gangrene in the vicinity of the umbilicus. Or the erysipelas is complicated by peritonitis, enteritis, pneumonia, and the like, and the fatal termination then occurs at a later period, but is no less probable. Trousseau states that the disease is absolutely fatal, and Steiner has seen a favorable termination in only two cases out of sixty. Bednar, on the other hand, regards recovery as the more frequent result.

2. *Erysipelas of the Genitals.*—Upon the male and female sexual organs, apart from certain operative procedures, the kinds of diseases which result from the constitution of these parts serve as the chief exciting causes of erysipelas. In males, this includes the fistulous tracks of the urethra and the scrotum which result from strictures and periurethral abscesses, the specific ulcers, and various ulcerative processes. In such cases, the foreskin of the penis is considerably swollen, and may enlarge to such an extent that the head of the penis cannot be reached, and the orifice of the urethra is closed. The result is that the urine is only discharged in drops and constantly trickles upon the surroundings parts. This leads not infrequently to the production of extensive deeply spreading gangrene, which may dissect out the testicles. Recovery occurs very soon after a standstill has taken place. In adult females, erysipelas of the vulva is caused by uncleanliness, decomposition of the secretion of the vagina and of ulcers, and in little girls who suffer from aphthous and follicular ulcerations on account of neglect, from the action of the urine and fæces.

3. *Erysipelas of the Extremities.*—Next to erysipelas of the face, that of the extremities is observed most frequently. According to Billroth (Zurich Clinic, 1860–1870), among 248 cases, 123 occurred upon the limbs, 67 in the face, 13 on the scalp, 43 on the trunk.

According to the majority of reports, it occurs more frequently in the lower than in the upper limbs. This is explained not alone by the fact that all kinds of exciting causes, ulcerations, etc., appear more frequently on the lower limbs, but also by the fact that, on account of the circulatory conditions, injuries in this region heal more slowly, and present a greater tendency to an increase of the inflammatory process. Nevertheless, Tillmanns is certainly right when he asserts that the statistics bearing on this point depend in part upon the varying character of the material of observation at the command of individual writers. Erysipelas of the upper limbs is observed with relative frequency in

carpenters, butchers, carriage-makers, physicians, nurses, and that of the lower limb in blacksmith, tanners, servants, and the like. The children's physician, and particularly one connected with a hospital, sees more affections of the arm,[1] on account of vaccination erysipelas, while the physician to a penal institution treats more cases of erysipelas of the legs.

The course of erysipelas of the extremities is, on the average, favorable in adults. It is attended with more serious results when, on account of its extension, the joints become implicated, or when, as in the gangrenous form, extensive destruction of tissue develops, and secondarily, contractures which impede the functions of the limb.

Complications of Erysipelas.—In view of the violent and manifold effects of the erysipelatous process on the vital conditions of the entire organisms, it is conceivable that deviations from the normal course, or disturbances of the most varied kind often develop. They may begin on the first day of the disease, or appear at any time during its continuance. A part of the complications has been mentioned in the description of the symptomatology. We will now consider those forms in which suppuration and necrotic degeneration of the tissues result. The simplest variety consists of the unimportant superficial little abscesses which appear along the erysipelatous skin, often as early as the end of the first week, and spontaneous or artificial discharge of which is sufficient to cause them to heal. If the erysipelas remains for a longer time, or recurs in one spot, multiple depots of pus, sometimes extending into the subcutaneous connnective tissue, develop. If they are not too numerous, and the constitution of the patient is tolerably vigorous, they have no further significance beyond the results of a slight febrile movement. They heal by surgical interference (incision and careful bandaging) within a short time. These abscess formations should not be mistaken for those which appear during convalescence, or even after the lapse of weeks as the results of metastasis of the skin, the lymphatic glands, or other localities. These may remain unnoticed for a long time, are manifested finally with the symptoms of cold abscesses, are attended usually with febrile movement, and almost without exception develop deep in the tissues. Usually, also, these collections of pus are followed by no evil results.

Much more important are the destructive processes which are the results of a too profuse and abnormal exudation. After fever and general malaise, the skin usually becomes markedly infiltrated with œdema, very painful, discolored, and vesicles filled with sero-bloody contents sprout out upon the surface; beneath these are concealed the first

[1] As one of the weapons employed by the opponents of vaccination, use is made of the bad complication with vaccination erysipelas. I believe, however, that this accusation is carried too far, since it is observed very rarely after private vaccination, more frequently in foundling asylums and institutions of this character, in which, on the one hand, the number of children who are cachectic at the start, on the other hand, the spatial conditions and the more ready communicability, constitute so many predisposing factors. It may occur upon any day, from the completed vaccination of the lymph to the entire healing of the vaccine pustule. In the majority of cases, however, it occurs during the second week, *i. e.*, during the stage of maturity. Its course is not different from that of erysipelas which has developed from some other cause, inasmuch as it may remain localized or attack parts of varying dimensions, even the whole body. In healthy, vigorous children, if they are not too young, the process, as a rule, terminates favorably; in infants in public institutions the mortality is large (30%). Exhaustion must be mentioned as one of the most frequent causes (often more than 50%) of death, particularly after E. ambulans. With regard to the causes of vaccination erysipelas, we think it may be assumed that, when the predisposition is present, the exciting cause is furnished by the vaccine matter employed, as well as by morbific agents brought from the outside by means of instruments, uncleanliness, etc.

beginnings of mortification. If it soon becomes limited in its further course, the loss of substance will assume importance on account of its situation alone (eyelids, scrotum). In rarer cases, the gangrene causes important destruction, and may thus become the cause of various other complications. There may also be a deviation in the quality of the exudation, inasmuch as an exudation, which is in the main plastic, is added to the previously serous one. The skin thereby becomes as hard as a board, is of a bright-red to bluish-red color, and extremely painful. The result of this is the shred-like death of the corium, fasciæ, etc. Especially during severe erysipelas epidemics, the phlegmonous complications are not rare, and many a case of impaired mobility of a limb traces its origin to a contracture which has developed therefrom.

As a common course is often pursued by the erysipelatous and phlegmonous inflammation, and as a diffuse spread may be observed in both instances, both processes have come to be regarded as identical by various writers (Virchow, Tillmanns, and others). This assumption does not appear to me to be well founded; so long as the cause of both (at least in the majority of cases) is so different, and their characteristics vary so greatly from one another, I think that I may properly maintain the separate specific nature of each. We might, with equal justice, include in this category the hospital gangrene occasionally associated with erysipelas, and it would also be justifiable to regard lymphangioitis, phlebitis, and osteo-myelitis (Virchow) as erysipelatous processes.

With regard to the general condition, the typhoid stage should be regarded as one of the most serious complications. About the time that a retrogression of the disease should be expected—on the seventh day, on the average—the fever and high temperature occasionally remain stationary, without any corresponding cause being present on the part of the affection of the skin. In such cases, the pulse is accelerated, more rarely slow (sixty), small and dicrotic, the tongue is dry and fissured; the passages diarrhœal and stinking, the abdomen distended, the skin covered with a clammy sweat; the emaciation is considerable. In otherwise healthy individuals, improvement takes place quite often; the majority, however, die of adynamia towards the end of the second week.

Among the more frequent complications of erysipelas we may mention: meningitis, pneumonia, pleurisy, endocarditis, pericarditis, peritonitis, enteritis, nephritis, and synovitis, by which one or more organs may be affected simultaneously. In general, on account of the propagating character of erysipelas, the organs which are situated nearest to it are specially predisposed to implication, and therefore, for example, in erysipelas of the abdomen the peritoneum and the coils of intestines are affected in preference; in that of the chest, the serous membranes, heart and lung, etc. But this by no means excludes the quite frequent affection of organs which are situated more remotely from the inflammation.

Etiology.—I regard every kind of erosion, fissure, pustule, open or concealed wound and injury as an occasional cause of erysipelas. However, the simple existence of such affections is not sufficient for the production of erysipelas, but certain other exciting causes must be associated therewith. Experience at the sick-bed has taught us that open wounds present a changed appearance even before erysipelas develops. Everything forces us to the assumption that a special process occurs which then unfolds its deleterious effects.

The question then is, What is the nature of the process which lies at the bottom of erysipelas? Hebra, Kaposi, and others assume that it is the secondary chemical products of the local inflammation which, when absorbed, produce this zymotic disease. Roser favors its miasmatic nature, while the overwhelming majority of pathologists of the present day favor its contagious nature. They call attention to the observation that erysipelas in hospitals spreads preferably to the adjacent beds, that occasionally a single imported case is followed by entire epidemics, and that finally several cases of erysipelas may follow one another in families. Cohnheim regards erysipelas as a miasmatic-contagious disease.

A number of investigators have introduced erysipelatous fluid, pus, and ichorous masses into the skin of man and animals, in order to determine the communicability of erysipelas. But all these exhaustive experiments have furnished no harmonious results. For while some have attained only a negative (Max Wolf, Stark, Hiller), not marked (Ponfick), indeterminate (Belieu, Zuelzer), or, at the most, a partial result (Tillmanns), others are said to have succeeded in producing legitimate erysipelas by means of putrid mixtures (Orth, Lukomsky). My attempts at communication have proven entirely unsuccessful. Only on one occasion after a superficial injection of six drops of fresh fluid, I observed a redness in the vicinity about as large as a two-dollar piece, which developed in a few hours with an elevation of temperature scarcely worthy of mention, and which disappeared at the end of twenty-four hours. Nevertheless, I cannot undervalue the few but undoubtedly positive experimental results, as they are also supported by the clinical facts.

Orth, with the aid of his experimental results, expressed himself in favor of the direct connection of erysipelas with cocci vegetations. And Lukomsky, who studied this subject carefully, states that in spots of erysipelas the bacteria are found in the lymphatic vessels of the corium and the subcutaneous connective tissue and at the borders exclusively in the blood capillaries. Billroth and Ehrlich were unable to discover cocci in every case of erysipelas. According to Tillmanns, the presence of cocci is by no means necessary to the erysipelatous process, although these were always present in the successful vaccinations of erysipelas fluid; on the other hand, not every coccus-containing fluid produces erysipelas. He concludes, therefore, that erysipelas occurs with and without fungus vegetations, and that the poison may be transmitted by a fluid containing cocci as well as one free from them. Very recently R. Koch, and soon afterwards Fehleisen, have expressed themselves in favor of a specific pathogenic micrococcus, which has its habitat in the lymphatic vessels of the skin and subcutaneous connective tissue.

The proofs which have been advanced of the specific nature of the erysipelas micrococci do not seem to me to be sufficient. The observations that erysipelas starts occasionally from completely healed, cicatricial parts of the skin or from the most heterogeneous inflammatory and purulent foci, on the one hand, renders the assumption of its autochthonous origin superfluous and, on the other hand, distinctly favors the view that the cocci are not an indispensable requisite for its production. According to my conception, a deleterious substance is produced under specially irritating influences, either in loco or it reaches the inflammatory spot from the outside and produces erysipelas in predisposed individuals.

Sex, age, the season of the year, the weather, telluric conditions, and the like are usually mentioned as predisposing factors of erysipelas. With regard to the first three, a series of tables gives the following results. Among my 67 patients treated at this clinic, 26 (38.8%) were males and 41 (61.2%) females. Almost the same proportions are shown by five annual reports of the Vienna General Hospital. With reference to age, among my patients, 17 occurred before the 20th year, 20 between 20–30 years, 10 between 30–40 years, 16 between 40–50 years, and 4 cases between 50–60 years. With