or disused, pushed to a higher dose or reduced in the quantity administered, according as resolution of the sclerosis is announced, the erosion begins to heal, and the affected part to assume its normal character as to size, color, and freedom from obvious lesions.

The preparations employed are those useful in the general management of syphilis, to which reference may be made. The protoiodide of mercury in doses of from $\frac{1}{10}$ to $\frac{1}{2}$ grain, calomel in doses of from $\frac{1}{10}$ to $\frac{1}{6}$ grain, gray powder, the bichloride (less preferable for this special purpose, as, in the doses ordinarily well tolerated, its operation is slower), and the biniodide may each be employed. In all cases of anæmic patients the hygienic and tonic remedies useful in the management of general syphilis should regularly be employed.

"Mixed" chancres do not call for destruction by cauterization. They are often tender and painful, and in these cases much trouble may be avoided by early and persistent use of the hot borated immersions and washings described above.

The buboes accompanying syphilitic chancre often require no treatment beyond that advised for the initial sore, whether local or by internal medication, as the progress of the one toward a favorable issue, or the reverse, is usually proportioned to the improvement or aggravation of the other. Often the glands are neither large, painful, nor tender, the patient scarcely appreciating the fact of their undue size and hardness. In other cases they are voluminous and are the source either of local distress or of discomfort experienced in the movement of neighboring parts (leg, thigh, arm, jaw, etc.). In this condition frequent ablution of the glands with water as hot as can be tolerated is the best, simplest,



and most grateful method of treatment, followed, when needed, by a weak mercurial salve well rubbed into the skin covering the glands—ammoniated mercury, 10 grains to the ounce of lanolin and vaseline; mercurial ointment, 1 part to 10 of simple unguent. To either salve, when there is much pain and tenderness, a small quantity of the extract of belladonna or of the watery extract of opium may be added. These unguents should, however, be not too amply supplied with drugs of the narcotico-stimulant class, as, even in the strength of 10 grains to the ounce, systemic effects have been induced after application to the groin.

In the event of "mixed" bubo there commonly results abscess of the glandular contents and either spontaneous or artificial opening of the same. The treatment of this complication is that of the bubo of soft chancre.

With the healing of the chancre, when this is secured before the onset of general symptoms, ends a tolerably well-defined phase of syphilis, the period once called that of "primary syphilis," the period of lesions for the most part localized. Yet here, even at the outset of the evolution of the disease, it is made clear that no sharply-defined limits or periods are observed. For, as has already been shown, the chancre may at times persist long after general symptoms have been declared, and traces of it may be discernible even when grave complications of general intoxication have occurred.

### The Evolution of Syphilis in Stages or Excursions.

In the early part of the present century Fernel and Hunter were followed by the late eminent Philip Ricord in establishing for the evolution of syphilis an artificial

system based upon chronological data. This system commended itself to the medical men of the scientific world, and as a result it secured at an early date almost universal acceptance. According to this scheme, there were three "stages" of the disease: a "primary" stage, inclusive of the period of the infecting chancre and its accompanying adenopathy; a "secondary" stage, lasting from a few months to two or three years, in which appeared most of the syphilodermata and the disorders of the appendages of the skin and the mucous membranes; and a "tertiary" stage, lasting indefinitely from the close of the secondary period until a final result was reached either in one direction or the other, with the absolute cessation of the malady. In this latter stage occurred most of the affections of the deeper tissues, of the viscera, the bones, the testes, the nervous centres, and the fibrous and subcutaneous structures. The "secondary" was supposed to follow the "primary," and the "tertiary" was supposed to follow the "secondary" stage.

The objections to this chronological scheme have been multiplying for the last few years, until it has become needful either to abandon wholly its ingenious suggestiveness or to admit it and its conclusions only with exception and reserve. First among these objections may be named the implication that a classical syphilis should in its evolution persist throughout these three "stages;" the fact being that, as statistics clearly indicate, the largest number by far of all cases of syphilis never exhibit any signs of a "tertiary" stage. Second, the implication was made that in any given stage, especially in the so-called "secondary," the evolution of symptoms observed a definite order like



that of the "stages," one crop, for example, of syphilodermata following another in a definite procession of symptoms; the facts being quite opposed to such a course, seeing that a syphilis thus regularly evolved, however conformed to the artificial time schedule of the schools, is clinically never seen. Third, there was overlooked or ignored a series of facts in which the chronological order of the scheme was violently reversed, so-called "tertiary" symptoms following "primary" without the evolution of any lesions which properly belonged to a "secondary" stage; while even the symptoms of the "secondary" period were at times found to succeed instead of preceding those described as "tertiary." Lastly, a fact of serious importance in the study of syphilis was to be considered—the fact that many, if not actually the larger number, of all cases of grave disease are thus grave from an early moment in the career of the malady, so-called "tertiary" symptoms developing with a degree of rapidity as startling as it is portentous. It was in recognition of these obvious and numerous violations of their chronological system that the French have been obliged to coin such explanatory phrases as "precocious," "late," "tardy," "galloping," etc.—terms confessing the inadequacy of the time schedule, and yet employed not in the ordinary course, but in the grave crises of the malady—epochs when a fairly good working system should be ready and fitted for every emergency that may arise.

In order to grasp intelligently the facts of syphilis as they actually occur, it is well to make no attempt to force them into accordance with an artificial scheme, however cleverly arranged and readily understood, but rather to classify them in natural divisions. Thus

studied, it will be seen that for the vast number of all cases of the disease there is no fixed line of demarcation between its consecutive phenomena, and no fixed period of time in which any given series of symptoms will be begun or concluded. From the moment of infection to any conclusion which the disease may acknowledge there is a regular progression, not along one line, but along many lines, and these lines never alike or parallel, but divergent in a thousand directions. By classifying in certain groups these excursions along various routes a systematic knowledge of the evolution of syphilis may be obtained. Instead of a chronological schedule, one may more profitably, to use a different figure, employ the radii of a circle to represent to the mind the divergences of the different symptoms of syphilis from the fixed pathological centre represented by the initial lesion.

The most of syphilitic histories may be traced along the lines of advance represented by the four divisions hereinafter described. From the point of infection each of these lines of advance, or excursions, represents, it should be remembered, not a narrowly-bordered pathway of symptoms, but a general direction, with variations deflected on either hand to divergences from other directions—no single history, perhaps, following exactly the same course, but each trending near one or another of the excursions defined.

**I. Benignant Syphilis with Mild and Transitory Symptoms.**—Upon one extreme in this category are the cases in which typical initial scleroses with characteristic accompanying adenopathy are followed by symptoms which are either not at all appreciated by the subject of the disease or which barely suffice to awaken his or



her attention. A slight efflorescence upon the abdominal surface, a few days of malaise, and the disease is at an end, irrespective of any treatment whatever. It is true that it has been claimed that grave syphilis eventually follows, but a sufficient number of these patients has been observed to substantiate the fact of a further complete immunity from all signs of the disease. Similar facts have been recognized in attempts at the production of the infectious granulomata in the lower animals, and even in the vaccination of heifers for the purpose of cultivating vaccine virus. There are simply some individuals who seem to be protected against the incursions of the disease by reason of an individual idiosyncrasy.

**II. Benignant Syphilis with Relapsing or Persistent Superficial Symptoms.**—This is the excursion observed, in all probability, in the larger number of all cases of syphilis occurring in the white races, and especially among those inhabiting the northern portions of the American and European Continents. In this category are to be recognized the patients in whom typical chancres are followed by characteristic so-called "early" manifestations of general syphilis. But all the lesions which result are superficial, and whether, as is often the case, they prove relapsing or persistent for long periods of time, involution is finally reached without the production of any permanent relics of the process. These histories are usually those of skin-symptoms (papules, scales, etc.) disappearing and reappearing —disappearing on the intervention of proper treatment, reappearing after neglect or discontinuance of the latter, or when the health, for any intercurrent reason, has been impaired, but never throughout producing a pro-

found depression of the system nor inducing cachexia. The disease from first to last has been a serious annoyance rather than a formidable enemy, and if the cause were not known and the results had not been dreaded, but little anxiety would have been awakened by its encroachment.

It is these cases that furnish abundant proofs of the skill of the trained physician, and also of the tremendous energy exerted upon the health by its worst enemies, lack of proper hygiene, alcoholism, senility, debauchery, poverty, and prior wasting disease.

The cases included in this category may without warning, and often inexplicably, exhibit the symptoms enumerated in any of the other excursions described; but it is true that the majority of all cases under observation develop along the line here suggested—that of symptoms relapsing or persistent and superficial, and, however persistent, never ultimately followed by destructive results. In other words, patients of this large class, as a rule, entirely fail of exhibiting symptoms of the type described as "tertiary."

**III. Malignant Syphilis with Relapsing or Persistent Profound Symptoms.**—In this category are included the cases eminently of transitory type. They are speedily transferred by the best of management into the list of benign cases, or with and even without treatment are readily exchanged into the graver list of malignant cases catalogued in the fourth of the divisions here considered.

The malignancy of these cases is declared in the deterioration of the tone of the system, in the production of cachexia, and in some cases by the degeneration of lesions which in other patients are resolved without



producing permanent relics of the process. Here at times develop in the viscera, nerves, bones, etc. gummata which resolve under appropriate therapy; at other times, when degeneration occurs, the repair is either satisfactorily good, or the damage resulting is so slight as not to interfere with the bodily health. The element of gravity is lacking in each case, however portentous at any one time may be the extent or the depth of the invasion. Often it is the fewness and depth, rather than the number and degeneration, of the lesions that justify the designation "malignant." It is in this class of patients, as in that just discussed, where the brilliant results of medicinal and hygienic treatment of the disease are most effectively exhibited.

**IV. Malignant Syphilis with Relapsing or Profound Lesions that are Ultimately Destructive.**—In this division, represented probably by from 5 to 20 per cent., at the most, of all cases of syphilis, are catalogued the number of patients exhibiting signs of what may justly be described as grave syphilis. Here the disintegrating and ulcerating gumma destroys renal, nervous, hepatic, and osteoid cells, pierces through bone and cartilage with appalling rapidity, converts into one hideous chasm both the nasal and the oral cavities, produces the paralytic, the imbecile, the repulsively deformed, and at times pushes its destructive forces to a fatal result. For the most part, however, in acquired as distinguished from hereditary syphilis, even in grave cases a fatal result is not so much to be anticipated as is serious damage of the sort suggested. Syphilis in its worst manifestations and activities often mutilates, paralyzes, and cripples, but it rarely kills.

In this connection it is worthy of note that the fright-

ful consequences which hedge about the track of the disease are not more conspicuous than the rapidity with which it traverses its path. Often before the last traces of the infecting sore have disappeared the hard palate is perforated, the body is covered with sloughing ulcers, or the liver is stuffed with ominous nodules. Here there has been no chronological order, no possible interval for the occurrence of a "secondary" stage, no pause in which even the best of treatment might have averted the conclusion. It is these cases that have necessitated on the part of the French—who still, for the most part, adhere to the chronological order of syphilitic manifestations—the adoption of such phrases as "galloping," "precocious," and "lightning." Indeed, of all cases of syphilis really entitled to be termed "malignant," it may be affirmed that the majority bear the impress of such malignancy in the rapidity of progress of the malady.

It is in this division also that the great triumphs of science may be achieved. Even in the worst phases of syphilis—those chiefly displayed in the fourth of the classes here enumerated—repair may be made to ensue when the destruction has been gravest and the systemic results are most profound.

Between these four radii most of the excursions of syphilis may be discerned. These lines are not all rectilinear; many lie along or near the main divisions, but pursue a tortuous course from chancre to complete relief of all symptoms, the line now curving toward malignancy, now recurving to the other side. As a rule, the graver the case the straighter the excursion; the milder the symptoms the more numerous the



deflections toward one side or the other, with no wide divergence to either. Rarely the course of syphilis is to be represented by a line wholly diverted from the first to the fourth of the main divisions of the circle here suggested.

The determining influences which result in these divergences are of the highest importance. First among all may be named the character of the soil in which the germ is implanted. The very young, the very old, those weakened by other maladies, by lack of food and of proper hygienic environment, the victims of drink, of debauchery, of poverty, of inherited weakness, —all suffer early and often from the added burden of syphilis. Second is to be named the early and effective intervention of proper treatment. Cases which have been neglected, those in which the disease has long been either ignored or treated inefficiently, are apt, before others, to display formidable symptoms. A third cause is described by authors as the complication resulting from the implantation of the germ of syphilis upon the system contaminated with tuberculosis, struma, and such cognate disorders as rickets, but these coincidences are much rarer than is generally supposed.

Fortunately for the future of the human race, the subjects of acquired syphilis are, as a rule, between the middle of the second and the conclusion of the third decade of life—a period when the system is best fitted to endure the severe ordeal to which, in this affection, it is reasonably sure to be subjected. With the ample opportunities for good treatment afforded in the English-speaking countries of the world, the majority of all victims of disease eventually escape payment of its severest penalties, marry, and beget healthy children. Though

afterward they may in some degree be reminded of their old enemy, even as the victim of an ancient pneumonia or a broken thigh has reason at times to recall his former mishap, they go to their graves as do other men and women, with diseases of a different type, and with consequences unchanged by the infection wrought at an early period of life.

### The Evolution of Syphilis Subsequent to the Chancre.

It has been shown that chancres may persist to a point of time long after the exhibition of signs of general infection. Often, however, the period which may be described as the chancre-stage has been completed fully before such general symptoms appear. The term "primary syphilis," as has been shown, was once employed to designate this chancre-stage, and the next period of evolution of the disease was, as distinguished from that which preceded and that which followed, called the stage of "secondary syphilis." Between the two periods it was believed and taught that a distinct interval of pause or arrest occurred; this interval was given the title of "the second incubation," as subsequent in time to what was called "the first incubation" of the chancre. It is true that in many cases an apparent delay occurs after a distinct conclusion of the chancre-stage before general symptoms of syphilis are declared, but it is equally certain that in other cases there is no appreciable delay, and that in yet others, where such delay or pause seems to occur, it is due to an apparent rather than a real incubation. Its features, when studied with the utmost care and skill, are declared both in the skin and elsewhere as symptoms of the gradual evolu-



tion of the infective disorder, without any well-marked arrest. The wide range ascribed to this period of supposed incubation—from a few days to as many months—is a sufficient indication of the lack of precision involved in the use of the term. In general, it may be said that from the date of the appearance of a chancre to that of appreciable general syphilitic symptoms from forty to fifty days may elapse. This supposed period of incubation is without question shortened in malignant and rapidly-evolved cases, and is lengthened in those where an excellent constitution of the patient, exceptionally good treatment, or the mildness of the disorder has interposed a barrier to the extension of the malady.

It is wellnigh demonstrable, with the ample means at the disposal of the expert, that from the moment of the appearance of the chancre to the date of the onset of the earliest symptoms of generalized disease the signs of a gradual intoxication are with each day of its advance progressively apparent. These symptoms, often at first obscure, become usually much more obvious as the term of the supposed incubation draws to its further limit. Even, however, to the gross observation of the eye the victim of infection loses at the outset the usual appearance of health, and exhibits another which gradually acquires characteristic features—features by which, at times, the stadium of the disease may be recognized.

The skin, especially of the face, which is most often exposed to the eye of the observer, assumes a peculiar sallow or muddy hue varying from a yellowish shade to a deep reddish, somewhat empurpled tint. The facial expression may be one of dejection; there is often

cephalalgia, anorexia, vague or very well marked rheumatoid pains, headache and backache, lassitude, neuralgia of various nerve-trunks, and, in cases, typical jaundice. By due exploration it may be discovered that transitory effusions have occurred beneath the periosteum of exposed bones: there may be retinal hyperæmia, hepatic and splenic enlargement, or albuminuria. The percentage of the oxyhæmoglobin decreases with the number of the red blood-corpuscles, while the leucocytes increase. It is during this period also that there occur thermal changes which have been summed up rather loosely under the term "syphilitic fever."

The febrile symptoms recognized in an early or a late phase of syphilis occur neither with sufficient frequency nor with sufficiently characteristic features to justify the employment of a distinctive term. These thermal variations are most often of early occurrence, either before or soon after the exhibition of constitutional symptoms, and are in general due to the reaction of the system against the recently-introduced and multiplying toxine of the malady. Abnormal thermal variation may be wanting in more than 50 per cent. of all cases examined, or may be so slight as scarcely to attract attention; or it may be in a high degree pronounced, the physician, unaware of the precise cause of the disturbance, not infrequently assuming that the patient is suffering from a tertian or quotidian miasmatic fever. In well-marked and classical cases the temperature prior to the earliest eruptive phenomena rises to 103° and even to 106° F., and may then assume a continued or intermittent type with vespertine exacerbation. The fever is rather more often observed in the cachectic and weak than in the strong, and is often a precursor, when well marked, of a severe type of con-



secutive symptoms. It is said to be more common in women than in men, but on this point there should be great reserve. Fevers occurring in other stages of the disease are usually symptomatic of destructive processes due to the disease; though it is to be noted that the subject of syphilis is often in a depressed condition, and furnishes a large field for the invasion of intercurrent disorders, such as *la grippe* and tonsillar and bronchial affections, several of which may excite febrile reactions not directly connected with the specific affection.

### Involvement of the Lymphatic Glands.

The syphilitic bubo, or specific induration and enlargement of certain glands in anatomical proximity to the site of infection, has already been described. It is at a period later in the evolution of the disease, and usually at or near the close of the so-called period of "second incubation," that the lymphatic system (the glands, more particularly, of the several accessible regions of the body) exhibits characteristic changes. In well-marked cases one, if not quite all, of the glands which may be appreciated by the touch of the observer becomes enlarged, engorged, soft, and voluminous, as distinguished from the densely-indurated buboes accompanying the chancre. This ganglionic engorgement is one of the most constant of the signs of systemic syphilis, and though at times it may escape observation or actually be absent, it is so conspicuous a feature of some cases that patients themselves often call attention to it. At a given moment it may be the sole appreciable symptom. It betokens, when well marked, a general intoxication, and, though not always proportioned to the intensity of the disease in any given case, it occurs at times as