CHAPTER VI.

STATE OF THE BLOOD; SYPHILITIC FEVER; AFFECTIONS OF THE LYMPHATIC GANGLIA.

State of the Blood.

A series of analyses of the blood performed by M. Grassi, under the direction of Ricord, shows that this fluid undergoes a material change in the early stage of syphilis, consisting chiefly in a diminution of the blood-corpuscles, which, on an average, amounted to a loss of one-seventh, and, in one instance, to one-half of the usual number. Under the administration of iodide of potassium the number of the blood-corpuscles was found to increase; but no improvement took place from the use of mercury. This chloro-anæmia is confined to the early stage of syphilis; the blood soon recovers its normal composition and retains it throughout the whole course of the disease, unless syphilitic cachexia supervenes. Though foreign to our present subject, it may be mentioned, incidentally, that the blood of persons affected with chancroids was shown in a second series of analyses by Ricord and Grassi to remain unchanged; and thus these experiments, which were performed before the question of the duality of the chancrous virus had been mooted, are confirmatory of the distinction which is now recognized between the chancroid and syphilis.[1]

These results of Grassi have more recently been confirmed by Wilbouchewitch,[2] who, in a series of ten observations, also determined that the red blood-globules are diminished and the white globules increased in number. The following table of this observer shows the modifications in the number of globules during the primary stage of syphilis.

[1] Ricord, Leçons sur le Chancre, 2d ed., p. 184.
[2] Arch. de physiologie, pp. 509, 537, 1874.

	Red.	White.	No. of red to one white.
Healthy man	4,200,000 to 6,477,000	6,900 to 8,550	603 to 757
Syphilitic subject:			
1st count	4,170,000	9,000	421
2d " 3 days later	5,510,000	10,000	437
1st "	5,282,000	13,900	380
2d " 4 days later	3,864,000	11,550	336
1st "	4,338,060	10,000	433
2d " 3 days later	3,908,000	12,800	325
1st "	5,040,000	6,950	725
2d " 3 days later	4,269,000	5,600	762
1st "	4,392,800	8,800	565
2d " 4 days later	3,960,600	7,000	565
1st "	4,314,800	13,900	332
2d " 3 days later	3,614,000	10,800	347
1st "	3,950,600	7,900	564
2d " 4 days later	3,600,300	7,600	473
1st "	6,338,400	6,950	912
2d " 4 days later	4,297,800	7,000	612
1st "	4,886,400	11,200	436
2d " 6 days later	4,200,800	13,600	308
1st "	4,300,600	8,000	537
2d " 3 days later	3,600,400	11,200	321

From this it appears that the average diminution in the number of red globules as found in the second count was 638,870, and the increase in white was 550; the proportion of white globules to red in the first enumeration was 1 to 530 and in the second 1 to 448.

Syphilitic Fever.

The fact that elevations of the temperature of the body occur during the course of syphilis has long been known. Much valuable information on the subject has been furnished of late years by Fournier, Courteaux, Lancereaux, Bremer, Jarnovsky, and especially by Dr. J. E. Güntz, of Dresden.

In the first volume of the Archives of Dermatology, N. Y., p. 345, may be found the results of observations made by me with reference to this subject in sixty-two cases. Güntz is of the opinion that syphilitic fever occurs in only about 20 per cent. of patients, but I believe that careful examination will discover it in the majority of cases. It may be transitory or persistent; it may be so mild as to escape notice, or it may be moderately intense. It presents two forms; in one the febrile condition is continuous, in the other it shows distinct remissions.

Let us first consider the continuous fever which accompanies the evolution of syphilis, well named by the Germans the "eruption-fever." It seldom occurs before the thirtieth day of the secondary period of incubation, that is, ten days prior to the evolution of sec-

ondary symptoms. In at least half the cases of syphilis there is no febrile reaction until within three or four days of the first evidences of constitutional infection. In rare cases the temperature may reach 103° or even 105° within twenty-four or forty-eight hours. Frequently it does not exceed 101°, remaining at that point until the eruption appears, when it again rises possibly to 105°. It then, as a rule, falls gradually or abruptly to about 102°. In almost all cases there is a difference of about one degree between the morning and evening temperature. In other cases a temperature of 105° is observed ten or twelve days before the end of the secondary period of incubation, and continues, without remission, until the eruption appears, when it falls abruptly to 102°, where it may remain for several days. In the majority of our cases 102° has been about the average temperature.

Some observers consider the febrile reaction a reliable indication of constitutional infection, but in some cases the eruption precedes the fever by an interval of a week or ten days.

The remarkable effect of mercury upon the temperature has been noticed. Its use causes a reduction nearly or quite to the normal standard in some cases within ten days, whereas without it the febrile condition may persist for several months.

Early in the secondary period the fever is prone to relapse, possibly at the same time with a recurrence of general or special syphilitic symptoms. In these cases the temperature rarely goes above 102°.

When phagedæna attacks the initial lesion, and syphilitic cachexia appears early, the fever is likely to be excessive and prolonged. In weak and sickly persons the elevation is notably greater than in the robust, and in women it is higher than in men. We fully agree with Fournier that syphilitic fever occurs more frequently in females than in males. The febrile reaction accompanying an erythematous syphilide is often as extreme as in a simple eruptive fever. In most cases of papular eruption the fever is moderate. In cases of pustular eruption, and of iritis accompanying general secondary symptoms, it is more marked. In general the febrile reactions of the early years of syphilis are more intense than those occurring later. Indeed, lesions of much gravity may occur after the lapse of years, unaccompanied by fever. On the other hand, it may coexist with the various nervous and visceral affections of the tertiary stage.

Syphilitic fever not infrequently presents a distinctly remittent type, a peculiarity which may be noticed in the early period, but is generally not observed until late in the course of syphilis. We have seen but two cases in which the fever began in a remittent form ten days before the general outbreak, and retained its character for nearly three weeks. When remittent fever occurs early, it usually accompanies the development of constitutional symptoms. It is never very protracted. The exacerbations occur as a rule daily and towards night, beginning, perhaps, between six and eight o'clock with a general cold sensation, soon followed by fever. The chilly feeling may be insignificant, or it may be quite marked, and may last for an hour or more, being accompanied by a feeling of lassitude and soreness, and perhaps by headache, more or less severe. Thirst seems to be less than in other forms of fever. The sweating stage is incomplete, there frequently being only slight moisture of the surface. It thus differs from malarial fever in this respect, as well as in the fact that the stages are neither of them clearly defined, that of heat being most marked. The elevation of temperature varies from 102° to 105°. The pulse rate is not proportionately increased. Relapses are quite common, even after long intervals. The gravity of the fever is greatest in cachectic subjects, in whom it may assume a typhoid type.

This form of fever occurs most frequently in the secondary period during the first two years of infection; yet it may appear in the tertiary period, possibly coexisting with lesions peculiar to that stage. The prognosis depends wholly on that of the associated syphilitic diathesis.

Quinine has been found ineffective, but the remittent as well as the continuous form is strikingly amenable to mercury. The curious fact is reported by Jullien to have been observed by Domenico Copozzi, that in one instance the salts of quinia converted a quotidian syphilitic fever into a tertian, and then to a double tertian, when it relapsed to a quotidian, which finally yielded to mercury.

The relation of the febrile reaction to tissue metamorphosis has been made the subject of special study by Vajda. This observer found marked increase of urea in a patient who had mercurial stomatitis, the urea diminishing under the use of proper doses of mercury. Uric acid and creatinine were not found to be increased. The excretion of the phosphates was greater in exanthematous than in bone syphilis. In some cases a distinct relation was observed between the excretion of urea and phosphoric acid; and sulphuric acid was found to be increased in the papular syphilides in proportion to the extent of the eruption, while in bone lesions, under mercurial treatment, it at first increased and subsequently diminished. Much remains to be done in the investigation of this subject.

Affections of the Ganglia.

Engorgement of the Superficial Ganglia.—A very important symptom of the early stage of syphilis, and one which the surgeon should never fail to look for in cases of difficult diagnosis, is engorgement of the lymphatic ganglia in various parts of the body, and especially those situated upon the lateral and posterior portions of the neck. We are not here speaking of the induration of the ganglia in anatomical connection with the primary sore—the indurated ganglia, which assume their cartilaginous hardness about the same time as the base of the chancre. The symptom referred to is

an engorgement—not induration—of glands at a distance from the point where the virus entered the system, and first appears some six or eight weeks after the chancre, in conjunction with other early secondary manifestations.

This symptom is present in a large majority of cases at this stage of the disease. Ricord speaks of it as "perhaps the most constant, the earliest, and the most characteristic symptom of constitutional syphilis."[1] Bassereau[2] found it in ninety per cent. of all the cases of syphilitic erythema which came under his observation; and in most of the exceptional cases the patients had taken mercury or were not seen for some time after the eruption appeared. It is an early syphilitic symptom, and occurs, if at all, within a year after contagion. Ricord states that it is rarely seen in persons who contract syphilis after forty years of age, though Bassereau met with one case in a man aged sixty-three, and another in one aged seventy-four; from which it would appear that this rule is by no means invariable.

The glands most frequently affected are those situated along the upper two-thirds of the posterior border of the sterno-cleido-mastoideus muscle; but those on the back of the neck beneath the occiput, and one just posterior to the ear and over the mastoid process may also be involved. All the glands in the regions mentioned are not, however, implicated in the same person; the number is frequently but one or two, and rarely exceeds six or eight. In a state of health these bodies can with difficulty be detected, but when enlarged by syphilis they may attain the size of a bean or almond, and are often so prominent as to be recognized by the sight as well as the touch, and even to attract the notice of the patient's unprofessional associates. As a general rule, their number and size correspond to the extent and severity of the neighboring eruptions upon the scalp.

Other glands besides those of the neck may be engorged in the same manner. Sigmund has especially insisted upon enlargement of a lymphatic gland situated between the biceps and triceps muscles just above the internal condyle of the humerus, where we frequently observe it, although we do not believe it to be as constant as Sigmund's remarks would lead one to suppose. Bassereau has found the glands of the axilla affected, but only in case there was a papular or pustular eruption in the neighborhood of the shoulder. The submaxillary ganglia are also not unfrequently tumefied, when the throat is the seat of syphilitic angina, or when the mouth is made sore by the use of mercury.

This engorgement of the ganglia almost invariably terminates in resolution. In one case only, so far as I am aware, has suppuration been known to take place. This occurred in a patient, aged 30, of a scrofulous habit, under the care of Bassereau, in whom two collections of matter were formed in the cellular tissue around the gland, attended by severe febrile excitement and requiring puncture.

[1] Iconographie, Remarks on the case figured in Plate XLV.
[2] Op. cit., p. 68.

Some difference of opinion has been entertained as to the question whether this engorgement is necessarily dependent upon a neighboring eruption upon the scalp or integument. Ricord believes that it is not, and states in support of his opinion that it often occurs before the slightest trace of an eruption is visible; and to meet the objection that a pustule of ecthyma might be concealed in the hair and escape notice, this surgeon has repeatedly shaved the head and proved the scalp to be intact. Admitting, however, that the engorgement of the glands precedes the eruption, it does not disprove the connection between the two, which is rendered probable by the correspondence in their intensity; and swelling of the submaxillary glands, as is well known, is often anterior to an eruption of erysipelas upon the face. Diday is confident that engorgement of the ganglia does not exist without the presence of some affection of the neighboring integument or mucous membrane, and that it corresponds in intensity with the severity of the latter. For instance, the epi-trochlear gland is always most enlarged upon whichever side syphilitic squamæ upon the hand are most marked.

Deep Lymphatic Ganglia.—Lancereaux regards changes in these ganglia as among the most frequent and most constant of the effects of tertiary syphilis. They bear the same relation to syphilis of the viscera that adenopathy of the subcutaneous lymphatic glands does to syphilis of the skin; in other words, they are its constant accompaniment. The affection of the deep lymphatic glands may, however, exist without any lesion of the viscera, just as the post-cervical and epi-trochlear glands may be enlarged without any eruption upon the scalp or arms.

The glands most frequently affected are the prevertebral, lumbar, iliac, and femoral; the mesenteric glands and those of the extremities are rarely involved. The changes are various. Most frequently there is hyperplasia of the glandular elements; the gland is increased in length rather than in breadth, is friable, of soft consistency, of a reddish or yellowish-gray color, its surface injected, and its substance cheesy. In other cases the connective tissue of the gland appears to be the chief seat of the lesion, and this body becomes indurated. Suppuration is never present, which is an important diagnostic sign between this and the affections of the glands in typhoid fever, and in tuberculosis.

Two forms of syphilitic adenitis are described by Cornil,—the secondary, and the other of the tertiary stage of syphilis. In the former the microscope shows, besides the lymph-corpuscles, large spheroidal cells, more numerous in the cavernous than in the follicular structure of the gland. The cells contain several nuclei, the larger of which inclose nucleoli. There is also slight increase of the connective tissue, so that there exists cell-proliferation combined with a moderate degree of sclerosis. In tertiary adenitis the swollen ganglia form soft whitish masses of a medullary appearance. Round

and granular lymph-corpuscles and large multinucleated cells crowd the cavernous tissue and the lymph-passages of the ganglia. This is therefore a kind of catarrhal inflammation. Two forms of tertiary adenitis have been recognized and made the subject of a thesis by Gonnet,[1] who calls them sclerous and gummatous adenitis. He says they may occur together, and the former may be converted into the latter.

Thyroid Body.—In the post-mortem examination of old syphilitic subjects, this gland may be found to be hypertrophied, and to have undergone more or less complete fatty degeneration. The existence of gummy tumors has not been noted.

[1] L'adénopathie syph. tertiare, Thèse de Par., 1878.

CHAPTER VII.

CACHEXIA, CHLORO-ANÆMIA, ASTHENIA.

At certain periods during its course, syphilis produces an adynamic condition of the system, called "syphilitic cachexia." These periods are at, or just before, the evolution of the disease, during its secondary stage, and towards the close of its tertiary stage.

In those cases, fortunately rare, in which *phagedœna* complicates the initial lesion, there may be observed, soon after the onset of this process, loss of appetite and strength, emaciation, and a pale, sallow appearance. The pulse becomes rapid, weak, and small, and the temperature rises. The patient feels dejected, nervous, and apprehensive. The condition becomes graver in proportion to the extent of the local destructive process, and unless this be checked, complications, consisting of numerous functional disorders, accompany the inauguration of the secondary stage. Headache, neuralgic or rheumatoid pains, with severe nocturnal exacerbations, may torment the unfortunate sufferer, whose mind is equally harassed by many forebodings, as, for instance, in the case of phagedæna, by the prospect of losing his genital organs. Decided ganglionic enlargement usually accompanies this condition, and is a valuable symptom, since the secondary lesions of the skin and mucous membranes may be so trifling as to elude search, and the masked character of the initial lesion obscures the diagnosis. I have often noticed the disproportion between the character of the primary lesion and that of the early general manifestations, and I have seen several cases in which the very considerable extent of the local process, and the insignificance of the secondary symptoms, have prevented any suspicion of syphilis, the severity of the systemic disturbance being attributed to the phagedæna. The necessity of thorough and repeated scrutiny of every possible seat of secondary symptoms in all cases is evident.

In some cases, secondary and tertiary lesions, of an extremely severe type, may coexist with the primary lesion, and the patient may lapse into a typhoid state, or serious nervous affections may be developed, and even terminate fatally. Fortunately such a result is rare, but it is not uncommon to see a phagedenic chancre accompanied by a cachexia, which may continue for several months, and from which recovery is tedious and attended by repeated relapses.

The cachexia of the secondary period of syphilis may begin a few months after the onset of the disease. It is seen chiefly in weakly persons oftener than in the robust; and, again, more frequently in those who have had imperfect, or no treatment whatever; hence we have reason to infer that early and adequate treatment will