here. Nausea, vomiting, and hiccough are symptoms of grave uremia. A foul diarrhea may bespeak intense poisoning. *In severe cases the condition of the tongue, mouth, and fauces is pathognomonic. The tongue is bright red*[1] on its tip and sides, while the dorsum is coated and brown or grayish (Plate X). The entire organ, indeed *the entire mouth and fauces are dry and parched.* The saliva is diminished in quantity, viscid in consistence, and acid in reaction. In the last stages of the disease the foul breath, the sordes, the cracked, parched tongue brown in the centre and bright red all about, form a characteristic and repulsive picture.

The result of this condition of the mouth and tongue is the *buccal dysphagia*, first described by Guyon. On account of the dryness of his mouth the patient accepts with avidity all fluids, but has an aversion to solids, which he can masticate and swallow only with considerable discomfort.

Uremic Symptoms.—Drowsiness and torpor are often the earliest uremic symptoms. Later the drowsiness may deepen, or may alternate with or give place to a mental restlessness with wanderings and hallucinations, whence the patient may first be recalled, though later he goes into a [illegible] or comatose condition. At the same time [illegible] likely to occur, with absolute constipation or severe diarrhea—and then the end.

The U[illegible] [illegible] abundant, pale, perhaps bloody, often ar[illegible] It contains casts, but these may be obscured by the pus. These qualities are not peculiar, but the striking and ominous characteristic is the polyuria. The gravity of the patient's condition may often be fairly well estimated by this symptom alone. For as he loses ground his kidneys, instead of ceasing to secrete, as might be expected, habitually pour out a torrent of dilute urine. The patient passes from 4 to 6 litres (quarts) during the twenty-four hours, two thirds of it by night. This polyuria is a warning sign. It indicates a collapsed nerve force and threatens the worst.

The Patient's Aspect.—When a patient comes complaining of his bladder or kidneys a glance will reveal the presence of urinary septicemia to the experienced eye. His face is usually thin, drawn, and sallow, or, if fat, flabby and pasty. There is a history of failing digestion and lost weight. The skin is dry, perhaps feverish. There may be a slight edema of the extremities, but this symptom is often

[1] The *redness* and dryness of the tongue are directly due to the renal condition and are therefore constant, while the *coat* is attributable to the digestive disturbance and is therefore variable, or may even be entirely absent.

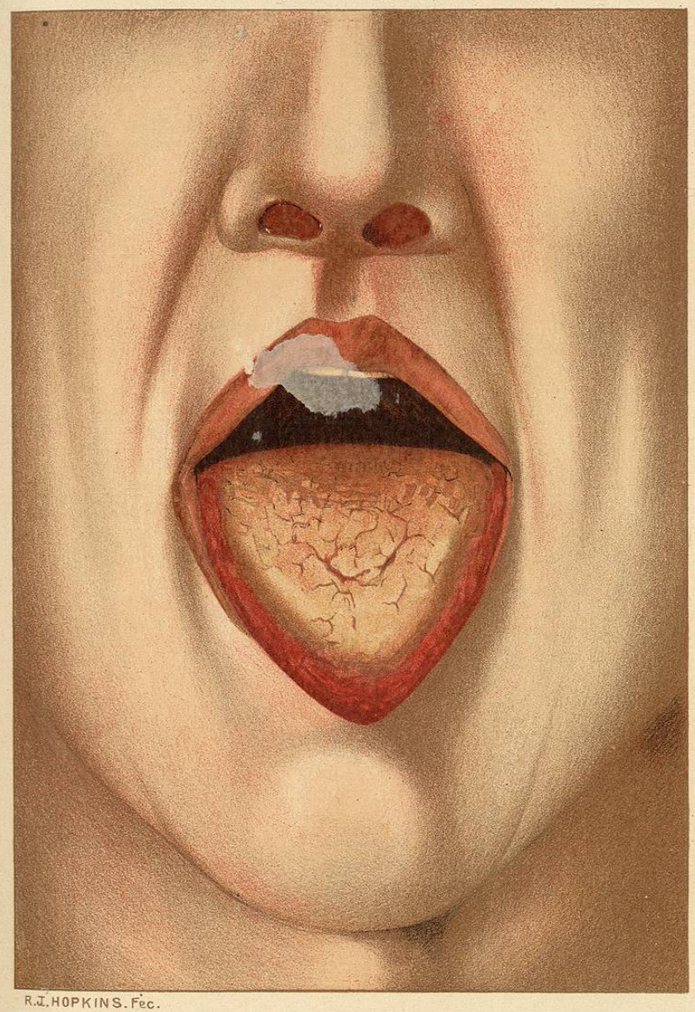
PLATE X

THE DRY, SCARLET TONGUE OF URINARY SEPTICEMIA

The tongue is parched, scarlet, narrow, and pointed.

It is often covered with a thick coat, and may be cracked, as shown in the plate.

PLATE X



R.J. HOPKINS. Fec.

THE DRY, SCARLET TONGUE OF URINARY SEPTICEMIA.

notable by its absence. The actions of the man betoken lassitude, even stupidity.

Types of the Infection.—Urinary septicemia manifests itself in one of four types—viz.:

Urethral Chill.—This condition, which has already been described (p. 43), may be defined as an acute form of urinary septicemia that may occur in a relatively sound individual as the result of urethral instrumentation.[1] This short, sharp chill usually passes off promptly, exceptionally kills the patient, and rarely ushers in the second type of urinary septicemia.

Acute Septicemia or Pyemia.—This type is characterized by repeated chills. The infection usually begins with a chill following urethral instrumentation. This rigor, instead of appearing suddenly, comes on slowly, is not intense, and instead of being succeeded by defervescence, initiates a febrile state, which continues interrupted by chills at irregular intervals of a few hours to a few days. The urine is often dense with urates. Desnos[2] asserts that the urine is not albuminous, but that the kidneys are sensitive to pressure in one half the cases. Among the complications may be mentioned toxic erythema, hypostatic pneumonia, and pyemic abscesses. As a rule, the chills may be controlled by the end of a week, and the patient gradually recovers, or he dies or passes into chronic urinary septicemia.

Chronic Urinary Septicemia.—This is urinary septicemia as encountered in every-day practice. It rarely begins as an acute septicemia. Its onset is habitually gradual, even obscure. The various symptoms that combine to make up the picture of this disease have been described above. Two classes of cases are encountered—viz.:

Dyspeptic cases, in which the patient complains solely or chiefly of his digestive disturbance. Such are the old men who suffer from prostatic retention, with little inflammation and little irritability. They recognise only that they are failing, losing weight and strength, becoming more and more drowsy, and utterly dyspeptic. They present the characteristic tongue, and show slight irregularities of temperature and some polyuria. Relief of the prostatic retention will cure the symptoms, unless, perchance, the surgeon's efforts, catheteral or operative, result in provoking the septic type of chronic urinary septicemia. If let alone these patients deteriorate slowly, and, if not carried off by intercurrent disease, pass finally into the septic type.

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[1] The exceptional cases in which the kidneys are sound and there is no infection do not concern us here.

[2] Traité élémentaire des maladies des voies urinaires, 1898; 2de éd., p. 909.

The septic type of chronic urinary septicemia is the grave condition that precedes the fatal termination of any chronic retention and suppuration in the bladder or kidneys. It may last for years, or death may close the scene within a few weeks of its onset. While the mildness of its symptoms may at first contrast vividly with those of urethral chill or acute urethral septicemia, it is in still more marked contrast to them, in that it always terminates fatally if left to itself. The approach of the fatal issue is betokened by accentuation of the polyuria and buccal dysphagia, and by the appearance of vomiting, hiccough, and diarrhea.

Treatment.—The treatment of urethral chill has already been described. The *prophylaxis* of urinary septicemia consists in the relief of retention and the prevention of inflammation.

The *curative treatment* of urinary septicemia, in whatever form, is conducted along the same general lines. Retention and suppuration are to be relieved by drainage (catheterization, urethrotomy, cystotomy, or nephrotomy), irrigation, and the administration of urinary antiseptics (pp. 371, 373), while the patient's vitality is reenforced by rest in bed and stimulants, his toxemia combated by diuresis, catharsis, and diaphoresis, and his symptoms appropriately relieved. Urotropin (or salol), diuretic waters, saline infusion, saline cathartics, nitroglycerin, and strychnin form the basis of treatment, while drainage is afforded according to the requirements of the case.

It is impossible to particularize beyond this. The treatment is reviewed in general elsewhere (p. 367), and the particular methods by which drainage should be obtained are discussed under the various appropriate sections. This much may be said, however, that, while the existence of urinary septicemia is evidence of retention and absorption of bacterial toxins through the kidneys, the retention to which the infection is attributable often occurs in the urethra or prostate, and hence, to relieve renal retention and suppuration in such cases, it is the bladder, and not the kidney, that must be drained.

CHAPTER XXXIX

SPECIAL SYMPTOMS, DIAGNOSIS, AND TREATMENT OF SURGICAL INFLAMMATIONS OF THE KIDNEY

SYMPTOMS AND DIAGNOSIS

Acute Catarrhal Pyelo-nephritis.—This inflammation is characterized by total bacteriuria, fever, and a few local symptoms. It seems to be caused solely by the bacillus coli communis and the typhoid bacillus. It occurs during pregnancy or in the course of a typhoid fever. It may also be the first stage of many ascending renal infections.

It is an ephemeral inflammation. I have known it to begin with repeated chills and a sharp rise of temperature, though it may commence less acutely. In the few cases I have seen the temperature ran a septic course, low in the morning, high in the evening, and was associated with little prostration and no evidence of urinary toxemia or septicemia. After a few days the temperature runs lower, and becomes normal between the fourth and the fourteenth day.

Meanwhile the local symptoms amount to nothing more than a slight ache and tenderness in the loins. The urine, however, shows a characteristic acid total bacteriuria (p. 363) and contains albumin and casts.

As the acute inflammation subsides, it is possible for the infection to be overcome spontaneously and for the kidneys to return to their normal state. Otherwise chronic catarrhal or suppurative pyelo-nephritis supervenes.

Diagnosis.—Acute catarrhal pyelo-nephritis is not an uncommon inflammation, but practically it is always overlooked. When it occurs in the course of a pregnancy the obstetrician recognises the albuminuria, but pays no attention to the bacteriuria. If the fever is low it is overlooked, if high it is misinterpreted. The inflammation soon becomes chronic, and so continues indefinitely, or disappears without any diagnosis or treatment other than that of puerperal nephritis.