II. CHRONIC RHEUMATISM.

Etiology.—This affection may follow an acute or subacute attack, but more commonly comes on insidiously in persons who have passed the middle period of life. In my experience it is extremely rare as a sequence of acute rheumatism. It is most common among the poor, particularly washer-women, day laborers, and those whose occupation exposes them to cold and damp.

Morbid Anatomy.—The synovial membranes are injected, but there is usually not much effusion. The capsule and ligaments of the joints are thickened, and the sheaths of the tendons in the neighborhood undergo similar alterations, so that the free play of the joint is greatly impaired. In long-standing cases the cartilages also undergo changes, and may show erosions. Even in cases with the severest symptoms, the joint may be very slightly altered in appearance. Important changes take place in the muscles and nerves adjacent to chronically inflamed joints, particularly in the mono-articular lesions of the shoulder or hip. Muscular atrophy supervenes partly from disuse, partly through nervous influences, either centric or reflex (Vulpian), or as a result of peripheral neuritis. In some cases when the joint is much distended the wasting may be due to pressure, either on the muscles themselves or on the vessels supplying them.

Symptoms.—Stiffness and pain are the chief features of chronic rheumatism. The latter is very liable to exacerbations, especially during changes in the weather. The joints may be tender to the touch and a little swollen, but seldom reddened. As a rule, many joints are affected; but there are instances in which the disease is confined to one shoulder, knee, or hip. The stiffness and pain are more marked after rest, and as the day advances the joints may, with exertion, become much more supple. The general health may not be seriously impaired. The disease is not immediately dangerous. Anchylosis may occur, and ultimately the joints may become very distorted. In many instances, particularly those in which the pain is severe, the general health may be seriously involved and the subjects become anæmic and very apt to suffer with neuralgia and dyspepsia. Valvular lesions, due to slow sclerotic changes, are not uncommon. They are associated with, not dependent upon, the articular disease.

The *prognosis* is not favorable, as a majority of the cases resist all methods of treatment. It is, however, a disease which persists indefinitely, and does not necessarily shorten life.

Treatment.—Internal remedies are of little service. It is important to maintain the digestive functions and to keep the general health at a high standard. Iodide of potassium, sarsaparilla, and guaiacum are sometimes beneficial. The salicylates are useless.

Local treatment is very beneficial. "Firing" with the Paquelin cautery relieves the pain, and it is perhaps the best form of counter-

irritation. Massage, with passive motion, helps to reduce swelling, and prevents anchylosis. It is particularly useful in cases which are associated with atrophy of the muscles. Electricity is not of much benefit. Climatic treatment is very advantageous. Many cases are greatly helped by prolonged residence in southern Europe or southern California. Rich patients should always winter in the South, and in this way avoid the cold, damp weather.

Hydrotherapeutic measures are specially beneficial in chronic rheumatism. Great relief is afforded by wrapping the affected joints in cold cloths, covered with a thin layer of blanket, and protected with oiled silk. The Turkish bath is useful, but the full benefit of this treatment is rarely seen except at bathing establishments. The hot alkaline waters are particularly useful, and a residence at the Hot Springs of Virginia or Arkansas, or at Banff, in the Rocky Mountains, on the Canadian Pacific Railway, will sometimes cure even obstinate cases.

III. PSEUDO-RHEUMATIC AFFECTIONS.

These are numerous, and occur as complications or sequelæ of many infectious diseases with which they have been considered. The one which is of most importance, and which, though a surgical affection, is usually treated of in works on medicine, is—

Gonorrhœal Rheumatism.—Though custom has sanctioned this term, the affection here considered has probably nothing whatever to do with rheumatism, but is an arthritis or synovitis of a septic nature, due to infection from the urethral discharge. It occurs either during an acute attack of gonorrhœa, or, more commonly, as the attack subsides, or when it has become chronic. It is far more frequent in men than in women. It is liable to recur, and is an affection of extraordinary obstinacy. It may involve many joints, but the knees and ankles are most commonly affected. It is peculiar in attacking certain joints which are rarely involved in acute rheumatism—as the sterno-clavicular, the intervertebral, the temporo-maxillary, and the sacro-iliac.

The *anatomical changes* are variable. The inflammation is often periarticular, and extends along the sheaths of the tendons. When effusion occurs in the joints it rarely becomes purulent. It has more commonly the characters of a synovitis. About the wrist and hand suppuration sometimes occurs in the sheaths. In the bacteriological examination the gonococci have been found in the exudate, but not invariably. They may be present in the tissues, however, and cause an effusion which may be sterile. It has been suggested that the simple arthritis or synovitis follows absorption of ptomaines from the urethral discharge, while the more severe suppurating forms are due to infection with pus organisms.

The *symptoms* of this disease are very variable. R. P. Howard recognized five clinical forms:

(*a*) *Arthralgic*, in which there are wandering pains about the joints, without redness or swelling. These persist for a long time.

(*b*) *Rheumatic*, in which several joints become affected, just as in subacute articular rheumatism. The fever is slight; the local inflammation may fix itself in one joint, but more commonly several become swollen and tender. In this form cerebral and cardiac complications may occur.

(*c*) *Acute gonorrhœal arthritis*, in which a single articulation becomes suddenly involved. The pain is severe, the swelling extensive, and due chiefly to peri-articular œdema. The general fever is not at all proportionate to the intensity of the local signs. The affection usually resolves, though suppuration occasionally supervenes.

(*d*) *Chronic Hydrarthrosis.*—This is usually mono-articular, and is particularly apt to involve the knee. It comes on often without pain, redness, or swelling. Formation of pus is rare. It occurred only twice in ninety-six cases tabulated by Nolen.

(*e*) *Bursal and Synovial Form.*—This attacks chiefly the tendons and their sheaths and the bursæ and the periosteum. The articulations may not be affected. The bursæ of the patella, the olecranon, and the tendo Achillis are most apt to be involved.

The disease is much more intractable than ordinary rheumatism, and relapses are extremely common. It may become chronic and last for years. A patient under my care, at the University Hospital, Philadelphia, was practically bedridden for nearly ten years with his first attack, and was carried from one health resort to another without getting much benefit. He finally recovered sufficiently to resume work, and enjoyed fair health for more than a year. Then he unfortunately had another attack of gonorrhœa. The multiple arthritis recurred, and when he came under my observation he had been ill nearly two years.

Complications.—Iritis is not infrequent and may recur with successive attacks. The visceral complications are rare. Endocarditis, pericarditis, and pleurisy may occur. R. L. MacDonnell recently analyzed twenty-seven cases of gonorrhœal rheumatism at the Montreal General Hospital, of which four presented signs of recent cardiac disease. Gluzinski has collected thirty-one cases from the literature. The endocarditis is usually simple, but occasionally there is an intense infection and ulcerative endocarditis with symptoms resembling typhoid fever.

Treatment.—The salicylates are of very little service, nor do they often relieve the pains in this affection. Iodide of potassium has also proved useless in my hands, even given in large doses. A general tonic treatment seems much more suitable—quinine, iron, and, in the chronic cases, arsenic.

The local treatment of the joints is very important. The thermocautery may be used to allay the pain and reduce the swelling. In acute cases, fixation of the joints is very beneficial, and in the chronic forms, massage and passive motion. The surgical treatment of this affection, as carried out nowadays, is more satisfactory, and I have seen strikingly good results follow incision and irrigation.

IV. MUSCULAR RHEUMATISM (*Myalgia*).

Definition.—A painful affection of the voluntary muscles and of the fasciæ and periosteum to which they are attached. The affection has received various names, according to its seat, as torticollis, lumbago, pleurodynia, etc.

Etiology.—The attacks follow cold and exposure, the usual conditions favorable to the development of rheumatism. It is by no means certain that the muscular tissues are the seat of the disease. Many writers claim, perhaps correctly, that it is a neuralgia of the sensory nerves of the muscles. Until our knowledge is more accurate, however, it may be considered under the rheumatic affections.

It is most commonly met with in men, particularly those exposed to cold and whose occupations are laborious. It is apt to follow exposure to a draught of air, as from an open window in a railway carriage. A sudden chilling after heavy exertion may also bring on an attack of lumbago. Persons of a rheumatic or gouty habit are certainly more prone to this affection. One attack renders an individual more liable to another. It is usually acute, but may become subacute or even chronic.

Symptoms.—The affection is entirely local. The constitutional disturbance is slight, and, even in severe cases, there may be no fever. Pain is a prominent symptom. It may be constant, or may occur only when the muscles are drawn into certain positions. It may be a dull ache or a bruised pain, or sharp, severe, and cramp-like. It is often sufficiently intense to cause the patient to cry out. Pressure on the affected part usually gives relief. As a rule, myalgia is a transient affection, lasting from a few hours to a few days. Occasionally it is prolonged for several weeks. It is very apt to recur.

The following are the principal varieties:

(1) **Lumbago**, one of the most common and painful forms, affects the muscles of the loins and their tendinous attachments. It occurs chiefly in workingmen. It comes on suddenly, and in very severe cases completely incapacitates the patient, who may be unable to turn in bed or to rise from the sitting posture.

(2) **Stiff neck** or **torticollis** affects the muscles of the antero-lateral region of the neck. It is very common, and occurs most frequently in the young. The person holds the head in a peculiar manner, and rotates the whole body in attempting to turn it. Usually it is confined to one side. The muscles at the back of the neck may also be affected.