position in the asylum. He was cleanly in his habits, fed himself, and never sought to converse with any one, but would answer questions reasonably enough. He never read anything. Sometimes he would talk away, apparently to no one in particular. In general he was in good humour, but he was easily teased, irritated, and excited. He had been a stone-breaker before becoming insane, and still continued to work at this, in which he was very skilful. Now and then, suddenly throwing down his hammer, he would fly with his fist at some imaginary person, after which he would return to his work. He had the use of all his muscles. This went on for years without variation. His general health was good, but a progressive dementia was observed. After having been twenty-one years in the asylum, he was found one day lying upon his stone heap. The left arm and leg were found to be paralysed. The speech was affected, but there was no aphasia. After a week he died. The viscera of the thorax and abdomen were found healthy. On removing the skull cap the saw penetrated into a cavity. The right hemisphere was found softened down to the lateral ventricle, and quite disintegrated, the cavity occupied by a grumous fluid. Dr. Grierson believed that the destruction of the right hemisphere must have been the work of years; the left hemisphere seemed healthy.

Sometimes a patient seems, as it were, to struggle with two impulses which paralyse his will so that he cannot commence or execute movements. In other cases the lunatic seems to yield alternately to conflicting impulses. Then there are cases of double personality where the patient thinks another being shares his body with him. I had once the charge of an imbecile boy who used often to address himself: "You have been a bad boy to-day, F." Sometimes he would strike himself hard blows on the face, and then roar out.

The natural disparity in the weight of the two hemispheres found in the sane is increased with the insane.⁶ Sometimes it is the right brain which is found heaviest, sometimes the left; in the majority of brains examined the difference was in favour of the right hemisphere. The average disparity, whether on the right or left side, is about 16 grammes. Inequality in weight has been found to be most marked in general paralysis, idiocy, and epilepsy.

Dr. J. Murray Lindsay, of the Derby County Asylum, has kindly furnished me with a detail of the different weights above 1 ounce in 41 brains out of 279 necropsies in which the hemispheres were weighed separately. Of these overweights, 24 were on the right and 17 on the left side. The disparity mostly ranged from 2 ounces to 4 ounces. The greatest overweight was 9 ounces on the left in a case of mania. On Dr. Lindsay's list the inequalities were most marked in mania and epileptic idiocy (one case). I had once under my care a boy of 11 years, an epileptic imbecile, left-handed. He sometimes had fits implicating the right side of the body only, when he retained consciousness and could answer questions. The left hemisphere was smaller than the right. The right side of the encephalon weighed 20½ ounces, the left side 15½ ounces.

In 21 observations taken from the casebooks of the West Riding Asylum, the preponderance was in the right hemisphere in 11 cases, on the left in 9 cases, and in 1 the balance was equal. The inequalities ranged from 5 to 40 grammes; in 1 (general paralysis) it was 60 grammes on the right; in 2, on the left, the overweights were as high as 90 grammes (sclerosis of right) and 400 grammes (cyst on right side of brain). Whether the disparity is owing to the addition of adventitious deposit, or to unequal subtraction through atrophy, or to both, has not yet been made out.

Whether cases of somnambulism or double consciousness such as those of Felida and Léonie are to be explained, as Luys and others have suggested, by the supposition of one hemisphere being alternately active and inactive, is a question for which I cannot venture to claim space at present. It has been objected to this explanation that persons have been recognised to be, not only in two separate states, but in three or four, each having its own memory. I am, however, inclined to think that there are conditions in dreams and trances which depend on an unequal distribution of blood in the two hemispheres or in different parts of the brain.

Doctors Dumontpallier and Bérillon have sought to prove the functional independence of each hemisphere by experiments in the hypnotic state. They claim to be able to inhibit one side of the brain, while the activity of the other side is sustained; to arrest movements of one arm, while the other arm continues to act; to banish sensation from one side of the body while it is sustained on the other side; to introduce ideas of one complexion in one ear, and ideas of another complexion into the other: so that the subject is sad or fearful on one side of his brain, joyful or content on the other. To give an exact appreciation of these most interesting experiments would greatly prolong this article. The reader will find a full account of them in *Hypnotisme Expérimental: La Dualité Cérébrale* (par Edgar Bérillon, Paris, 1884) and a summary in *The Blot on the Brain*, p. 352.

ON POINTS OF AFFINITY BETWEEN RHEUMATOID ARTHRITIS, LOCOMOTOR ATAXY, AND EXOPHTHALMIC GOÏTRE.

By JOHN KENT SPENDER, M.D.LOND.,
Physician to the Royal Mineral Water Hospital, Bath.

In actual practice we soon discover that Nature does not provide abrupt classifications and symmetric groupings. Thus, the phenomena of locomotor ataxy depend upon distinct internal lesions, and the phenomena of goitre (whether there be exophthalmos or not) are associated with distinct external lesions. Now, some of the same phenomena are also found in a large number of cases of rheumatoid arthritis. The three diseases overlap each other, so to speak, at several points. Does not this go to prove that there is an arthritis which is essentially neural, apart from all diathetic contamination? These curious facts have a wide significance, and are of much interest to workers in the comparatively untilled ground of rheumatoid arthritis. If it be true, as Dr. Todd said, that a knowledge of gout is a passport to all humoral medicine, it is possible that a knowledge of rheumatoid arthritis will provide a key which will open many secret avenues of neural medicine.

PIGMENTATION OF SKIN.

I believe that I may fairly claim priority in observing and recording some *differentiæ* of rheumatoid arthritis during its early stage. These differential symptoms are striking and obtrusive. They belong to no other group of the large family of arthritis. Many rheumatoid people, belonging mostly to an age between 50 and 65, possess neither the distinction nor the energy to display nerve disturbances; but nearly every case of undoubted rheumatoid arthritis in early or middle life shows marks of cerebro-spinal sympathy in one or more ways. Look for pigment; feel the hands for cold sweats; examine the heart for quick beating and often high tension; and ask whether there be severe or paroxysmal neuralgia. The probability is great that you will catch at least one of these connotative signs. Assuming, then, that there is before you a neural arthritis with a yellow or melasmic bronzing of some part of the body usually sheltered from light, the judgment may at first lean to disease of the adrenal glands. Only for a moment need we dwell upon this, or upon the bare possibility of arsenical poisoning. To Dr. David Drummond, of Newcastle-on-Tyne, we are indebted for a record of the fact that a pigmentation, like that which is associated with tuberculous disease of the adrenal glands, is a frequent accompaniment of exophthalmic goitre. The favourite situations of the discoloration are around the prominent eyeballs; on the face generally; neck, armpits, and areola of nipples; abdomen, and inner part of both thighs. The patches are sometimes clearly defined, but often they fade imperceptibly into normally coloured skin. Wherever pigment occurs naturally, there it is found increased; and the colour varies from a pale yellow to a deep brown.

Very like these are those disturbances in the chromatogenous function of the skin which I have described as a common feature of rheumatoid arthritis. The pigment patches are more or less large; their hues are infinitely varied, and they are seen on many parts of the body. Across the forehead there may be a light bronze smear. Beneath

⁶ See Marandon de Montyel, *Annales Médico-Psychologiques*, Tome Sixième, 1887.

the lower eyelids the streak is sometimes very dark, and shines with metallic lustre. The dominant tints on the face are lemon and orange and citron. Occasionally the neck looks as if it had been soaked in a walnut dye; and in one case the complexion of the face resembled that of a mulatto, and it was partially covered with a brown seborrhœa. The arms and hands are often severely pigmented.

Trousseau called attention to leucoderma as a feature of exophthalmic goitre; and in three cases of rheumatoid arthritis I have seen round white patches of skin on the front of the forearm. The pigment of arthritis assumes many forms, one of the most common being yellow spots or freckles; but these are, I believe, never seen in exophthalmic goitre. Further, a larger number of goitrous cases are complicated with discolorment of skin than cases strictly rheumatoid.

TACHYCARDIA.

In exophthalmic goitre the disturbance of the heart's action may exist for months before any other symptom.

My original observation on the quickness of pulse which characterises so many cases of early rheumatoid arthritis has been confirmed by distinguished physicians—Sir Dyce Duckworth, Dr. Sansom, Dr. Archibald Garrod, and Dr. Pye-Smith. This form of tachycardia is not at all uncommon; certainly in every urban hospital or infirmary a case must exist now and then, and would be easily found if looked for. How is it interpreted? Is the subject of it called irritable or excitable, or is the tachycardia ascribed to old and forgotten myocarditis? What explanation is given in the official lecture room? Last November we took a kind of census of this symptom at our Mineral Water Hospital, in order to test the numerical severity of the cases of tachycardia then in the house and under my care. Of fifty-four patients occupying my beds, eighteen were unquestionable examples of rheumatoid arthritis, and nine (eight females and one male) had more or less quickness of pulse (average pulse not below 90). Now concerning the nine people above mentioned: the mean age was a trifle more than 42; four of the women were married and had children, and four were single; and the average rate of the pulse (taken in the sitting position) was 104. I have never found a material difference whether the patients were lying or standing, or after moderate exercise. The heart's action is not accelerated by emotion, sudden sights and sounds, or by pain. In none of our cases was there any apparent disease of the valves or the walls of the heart. The pulse is rarely small or feeble; sometimes it might be called hard and tense. We heard no cardiac murmurs, either at base or apex. In these points there is somewhat of a contrast in the behaviour of the circulation in exophthalmic goitre and rheumatoid arthritis respectively. But these diseases intimately touch one another in the frequency of the venous hum, which varies in character, intensity, and tone. It is the true vascular hum of pure anemia and chlorosis. The anemia of rheumatoid arthritis is of special significance in the tone of its tints and pallors, telling us in a manner not to be mistaken that scrofula and "consumption" are not far away.

In my private and hospital practice it is a matter of routine to search for an enlarged thyroid gland. The occasional coincidence of this enlargement with a moderate rheumatoid arthritis is not sufficiently recognised, but it should be sought for whenever there is a dark stain on the neck. Only one lobe of the gland may be affected. Inquiry about the behaviour of the thyroid should be pushed back to early womanhood. Extreme crippling arthritis, associated with exophthalmos and "paroxysmal hurry" of the heart, occurred in an aunt of mine, my father's eldest sister. Very lately Dr. Sansom entrusted to my care a young married lady suffering badly from arthritis of a pronounced rheumatoid type; and she has a sister afflicted severely with the ocular and vascular symptoms of the so-called Graves's disease.

TREMOR AND SPASMS.

That special upset of motorial function which is shown in tremors is common to both Graves's disease and rheumatoid arthritis. In the former there may be choreic movements of the limbs, and such a disturbance of the respiratory muscles as to cause breathlessness and almost dyspnoea. Tremblings of the head and rapid shakings of the arm are quite common in the history of goitre, and are now and then seen as a phe-

nomenon of rheumatoid degeneration. I may quote the case of a middle-aged woman, a housekeeper, who was under my care in the summer of 1888, on account of a to-and-fro spasm of a rheumatoid left arm. The heat of the axilla on the affected side was noteworthy. To the bare touch the sensation of heat was quite acute, and on one day (a cold and wet afternoon in July) the clinical thermometer gave a reading of 100°—exactly 2° in excess of the temperature on the other side. A remarkable example of tremor occurred in a rheumatoid lady, aged 36, entrusted to my care by Dr. Andrew, of Edinburgh. A shaking of the right arm began in November, 1888, after the death of a child. It did not go on during sleep, or when she was alone and quiet; but anything which caused surprise (whether joy or pain) began or intensified the trembling. It conformed strictly to the type of paralysis agitans, and was quite as uncontrollable.¹

Akin to the motorial aberration of tremor is the occurrence of muscular spasm. It is only in accordance with the analogy of compound nerves elsewhere that the motor portion of the pneumogastric nerve should be occasionally in trouble; and we see how profound this disturbance may be in the irregular movements of the trapezius muscle, and of the neighbouring portion of the sterno-mastoid. If the partial stoppage of the inhibitive function of the pneumogastric nerve be the proximate cause of the tachycardia, we may measure thereby what the molecular shaking of the spinal accessory must be. These functional shocks of the great eighth nerve are important bonds between rheumatoid arthritis and locomotor ataxy. In the early stage of both diseases there may be the so-called gastric crises, cramp of the stomach and vomiting; a pseudo-asthma, or a transient dyspnoea; and difficult swallowing from inco-ordination of the pharyngeal muscles. This lack of harmonious action in the pharyngeal muscles may be so complete as to lead to regurgitation of solid and liquid food through the nostrils.

PAIN.

It is in the grand element of pain that we see the closest sympathy between locomotor ataxy and rheumatoid arthritis. The pain of a rheumatoid limb may come and go in the same way. As a matter of chronology, pain now and then visits a rheumatoid patient almost before any articular symptom can be detected. The wife of a medical man whom I saw in 1887 had a painful condition—acute and paroxysmal—of the whole right arm. There was nothing to account for it except an early and slow osteo-arthritis of the carpus and elbow-joint. In 1888 a lady was sent to me from the north of England for the treatment of sciatica. There was a melasmic smear on each temple, and the bright orange splash on the forehead. The freckles on the skin over the knee-joint told their own tale, and a careful clinical examination revealed a "grating" and a difficulty in the movements of both knee- and hip-joints. The sciatica was purely secondary to the arthritic changes. I do not discuss the connection now; my plea is that it is much more than a chance event. Generally the specific rheumatoid neuralgia of the lower limb is, so to speak, pain in bulk; the sufferer clasps the thigh all round, and says that the pain is in every part of it. Sudden pains run up the arm—often beginning in a particular finger—and a grievous neuralgia, which simulates that of locomotor ataxy, is often felt in the region of the shoulder and the upper arm.

The burning and gnawing pain, the tinglings, and the sensations of cold and heat are common to both the diseases that we are now considering. But they are linked together in the closest way by the ruin of joint structures. Much mystery has been thrown around what is called Charcot's joint lesion, as though it were a special trophic affair. Few people have, I imagine, really believed this; and it is refreshing to find that Dr. Frederick Taylor, in his excellent *Manual of Medicine*, plainly professes his belief in the identity of the rheumatoid and Charcot lesions. The same view is supported by Dr. Archibald Garrod, in his complete monograph on *Rheumatism and Rheumatoid Arthritis*; and he quotes Mr. Marrant Baker as a surgical authority on the same side.

SOME UNCOMMON SYMPTOMS.

I travel a little outside the title of my paper in order to

¹ This patient so far convalesced that the trembling gradually left her.

glance at some erratic phenomena which cannot be formulated just yet.

Bulbar Warnings.—In early rheumatoid troubles we see, now and then, warnings and resemblances of bulbar paralysis.

Athetotic Contractions.—The mimicry of athetosis in the grasp of the rheumatoid hand is sometimes most remarkable. The fingers may bend and extend without any coherence or consistency of action. Abduction and adduction may be equally irregular; and I have seen the fingers engaged in slow involuntary movements when the attention has been directed elsewhere.

Glossy Skin.—"Glossy skin" belongs to the group of dystrophies and anæsthesiæ, so well described by Dr. Ord. This condition of skin—*atrophoderma neuritica*—is a common sequel of neuritis. When the fingers are affected they become smooth, shining, and dry; they taper in form, and their colour is pink or red. The nutrition of the nails is more or less injured. If anything were needed to prove the inadequacy of the naked surgical doctrine that rheumatoid arthritis is a result solely of mechanical wear and tear, it would be the phenomenon of glossy skin. As a sequel of pure rheumatism or pure gout, this symptom shows that rheumatoid degeneration has begun, and that it should be treated as such without delay.

The danger which lurks in glossy joints is illustrated by a petty accident which happened to me last winter. A lady of middle age, sent to me by Dr. Miller, of Fort William, had bent rheumatoid fingers, and there seemed no harm in trying to extend them by degrees. One day, however, I put her under the influence of methylene in order to apply a little more force than usual; and I had the misfortune to split the skin on the flexure side of the terminal joints of two fingers, with sudden and profuse hæmorrhage. Fortunately I had means for staunching blood at hand, and I prudently desisted from doing anything further.

Influenza.—My last remark refers to the connection between rheumatoid arthritis and influenza. In several cases I have been able to identify the beginning of the rheumatoid lesions with a severe attack of influenza in the winter of 1889-90. So convinced were the patients of the sequence of the diseases that in every instance it was mentioned to me as a fact about which no doubt could exist. The influenza passed off, but an ominous weakness was left behind. During this interregnum of depression and spanæmia a slow inflammatory process seized the carpal and tarsal articulations; there might be a gradual quickening of the pulse, but no pyrexia. There is a real danger of being led to treat these cases as if they were of the ordinary rheumatic kind; but no blunder can be more damaging to the patient or more hurtful to the credit of the practitioner. In one instance the substantial good which I had accomplished for a rheumatoid patient, an elderly lady, during three visits to Bath in 1888 and 1889, was entirely undone by a single bad attack of influenza in February, 1890; and about a year ago she came once more to Bath, somewhat in despair, and as crippled as ever.²

My chief object in this paper has been to point out the lines which our clinical inquiry may most profitably take; and that inquiry may lead us ere long to a broad generalisation that shall embrace phenomena now grouped under various titles. I have purposely refrained from speculation; our appropriate function at present is to collect and record facts. The work is full of interest, and there is every encouragement to go on. My debt of obligation to our Mineral Water Hospital is beyond all words; the clinical material gathered within its walls is of priceless value to the candid observer who has a "Platonic passion for knowledge," and the just mind which can sift and weigh that knowledge when found.

² In Sir Henry Holland's *Medical Notes and Reflections*, 3rd edition, p. 97, are some interesting remarks on the way in which the influenza of 1837 was followed by a cluster of other diseases of an asthenic type.

ETHER DRINKING IN MICHIGAN.—It is stated that ether drinking is prevalent in the northern counties of the State of Michigan principally among the Finns, Swedes, and Poles. It is generally taken in the form of compound spirits of ether and is mixed with whisky.

CASES ILLUSTRATING THE SURGICAL RELATIONS OF GOUT.¹

By LAWFORD KNAGGS, M.C.CANTAB., F.R.C.S.,
Ophthalmic Surgeon to the Leeds Public Dispensary.

ON commencing practice, one looks with suspicion and some scepticism upon conditions which older men speak vaguely of as gout, remembering the dictum of Sir Henry Thompson—a "refuge in time of trouble for practitioners of feeble diagnostic power is gout, particularly suppressed gout; therefore, beware of it." As time goes on and case after case comes under review, a larger experience reverses this judgment, and one becomes more and more impressed with the importance of recognising the gouty diathesis, not only on account of its power in modifying disease, but also from the marked success which attends upon its appropriate treatment. The impressions gained in student life of the irregular forms of gout are in the main vague and unsatisfactory; nor is this surprising when we see how summarily gouty conditions are disposed of in some of our leading surgical textbooks. In the last edition of Erichsen's *Surgery*, under causes of acute synovitis, we read: "In other cases it appears without apparent external cause, and is then usually due to exposure to cold, especially in rheumatic or gouty constitutions. In these cases it commonly happens that more joints than one are implicated at the same time; the affected articulations are more frequently those that are most exposed by having the thinnest covering of soft parts and by being especially subjected to variations of temperature, such as the knees and ankles." Under symptoms, the pain is described "as usually sharp, but when the disease occurs in rheumatic or gouty constitutions it is of a gnawing character." Under treatment, "if the patient be gouty, colchicum should be given." Eight lines in four pages are devoted to a recognised but obscure condition, and one that is by no means uncommon. When gouty conditions are under observation or discussion, either in the out-patients' rooms, or in the wards of the hospital, one always feels the want of something definite by which the constitutional state can be securely linked with the local disease. I see now that circumstances and custom are at fault. The analysis of the urine, both chemical and microscopical, assists greatly to establish an accurate diagnosis.

The best opportunity of knowing the various conditions which gout may assume is to be found in private and family practice. The general practitioner has an intimate knowledge of the idiosyncrasies and family predispositions of many of his patients. He detects the unity of the operating cause in the predominating skin affection; the erythema in one, the eczema in another. He tracks gout in the sclerotic and conjunctival inflammations, and even in the iris itself. In others, again, he sees in the mucous membranes confirmation of his views. The derangements or inflammations of the bronchial, gastro-intestinal, or genito-urinary tracts are not, in these people, simple inflammatory conditions, and to be dealt with as such, but as part and parcel of a distinct dyscrasia. He finds the children of these families subject to lithiasis, oxaluria, eczema, or dyspepsia, and, knowing that their grandfathers and great uncles were "martyrs to gout," how can he fail to grasp the indication of the family tendency, and to connect it with the constitutional diathesis?

There are many surgical conditions which have come before me in practice—complications of gout—which it may be not without interest to describe shortly; commencing with the urino-genital organs.

CASE I. Urethritis.—A gentleman, aged 40, healthy looking, well made, and of somewhat florid appearance, consulted me about a muco-purulent discharge from the urethra, which had appeared a few days before. He was married, had had no impure connection, and had no reason to think that his wife had any irritating vaginal discharge. Inquiry elicited that he had lately suffered from flatulence, and that beer never suited him. His urine was acid, contained a trace of albumen, pus cells and oxalate of lime crystals in some quantity. He was put upon 3 grs. of bicarbonate of potassium with 3 minims of liq. strychninæ, three times a day, and advised to avoid sac-

¹ Read before the Yorkshire Branch of the British Medical Association.