to do a complete post-aural operation, instead of trying conservative measures for any long time. If a patient be suffering from a tuberculous joint or kidney disease, operation is advised early, with the object of removing the focus of disease, and the same argument applies to the ear. Tuberculous disease here is very resistant to simple methods of treatment; it frequently causes very extensive destruction of the tissue in the immediate neighbourhood, and is a source of infection which may easily extend to brain, lungs, or elsewhere.

I have recently seen a patient, 14 years of age, with a definite family history of tubercle, suffering from double otorrhoea of seven years' duration, which had been treated by recognized conservative measures for some considerable time, but to no purpose; the suppuration continued, though it occasionally ceased for a few weeks at a time. At times a well-defined swelling appeared in the neck, involving the lymphatic glands in the region of the parotid; this was followed by what the mother termed "the ear bursting"—that is, an exacerbation of the discharge, probably due to a reinfection by some pyogenic micro-organisms, after which the swelling in the neck subsided. This was a case of tuberculous disease which had absolutely resisted conservative treatment, and the girl's deafness was a serious obstacle to her obtaining employment. Practically the whole of each tympanic membrane had been destroyed, leaving, curiously, the major part of each malleus *in situ*; this, coupled with the fact that the incus was not visible, and that, on drying the tympanum, pus could be seen to appear gradually on the posterior wall, showed that the disease was situated in the antrum, and only to a lesser extent in the attic; therefore the treatment which opens the best prospect of a permanent cure was the radical mastoid operation.

To sum up, the main point we must bear in mind is that the middle ear is a small cavity containing minute bones and recesses, and is lined by a delicate membrane, and that the longer suppuration persists the greater the destruction the contents of this cavity must inevitably suffer. As the destruction progresses so will the deafness increase, becoming as time goes on more and more difficult to improve; while all the time that this condition lasts the sufferer is ever liable to one of those grave complications which may easily place him in that craft wherein Charon will row him across the Styx, and so beyond the help of mortal man.

I wish to express my indebtedness to the British Medical Association for its assistance in making these preparations.

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REMARKS ON IRITIS, WITH SPECIAL REFERENCE TO GONORRHOEAL IRITIS.

By W. M. BEAUMONT,
SURGEON, BATH EYE INFIRMARY.

IN the past the claim of iritis to a recognized position as a morbid entity has been slowly and grudgingly acknowledged; and only a hundred years ago it seems to have been considered a detail of scleritis. Even now the qualifying adjectives, "rheumatic" and "gonorrhoeal," connote morbid conditions the differences between which are vague and uncertain. Rheumatic iritis does not seem to have been recognized by John Hunter (died 1793), and he even doubted the existence of syphilitic iritis.¹ Specific iritis was, however, discovered, or re-discovered, by Schmidt in 1801. It does not seem that the word "iritis" was used before the beginning of the nineteenth century. George Frick,² writing on iritis, says: "This species of inflammation, though of frequent occurrence, has not been described until lately"; and the disease is not mentioned by Scarpa,³ in 1818. In describing it Astley Cooper⁴ writes: "Inflammation of the iris, or as it has been lately called *iritis*." He had doubts whether iritis was due to syphilis or to the mercury which was given to cure it,⁵ and Travers tells us that a primary inflammation of the iris—as, for example, from syphilis or from mercury—is distinguished from the secondary, or that by extension from the conjunctiva, by the more sparing vascularity of the conjunctiva, etc."⁶ The theory of mercurial iritis received its death-blow from Middlemore.⁷

Gonorrhoeal iritis was recognized by Brodie⁸; he relates the case of a patient who in March, 1818, 'became affected with an ophthalmia, but of a different

nature from that which he laboured under in the preceding summer"—gonorrhoeal ophthalmia. "The inflammation was seated in the proper tunics of the eye; and it appeared probable that it would speedily have terminated in adhesions of the iris and destruction of the power of vision if its progress had not been arrested by repeated blood-lettings and the use of mercury. He had another attack of the same kind four years after (1822)." Lawrence⁹ also, in describing gonorrhoeal inflammation of the external tunics and iris, says: "The inflammation soon extends to the iris, which loses its brilliancy, assuming a dull and deeper hue. The pupil contracts and lymph is effused from its margin." Travers¹⁰ makes a passing allusion to gonorrhoea as a cause of iritis, and Astley Cooper speaks of gonorrhoeal rheumatism as "not an infrequent disease."¹¹ Gonorrhoeal iritis does not appear to have been observed by Monteath,¹² nor by Tyrrell,¹³ nor by Middlemore.¹⁴

Mackenzie¹⁵ was well acquainted with gonorrhoeal iritis, and introduces the subject by stating "that the urethral discharge in gonorrhoea is productive, through the medium of the constitution, of synovitis and iritis, has generally appeared so improbable, that the fact has been very slowly admitted by medical practitioners." His description of its symptoms and course and of the liability to relapse shows the keenness of his observation and the wideness of his experience.

The patients who have been observed to suffer from gonorrhoeal synovitis and iritis have generally been young men of scrofulous constitution, who lived hard and were careless of exposure to cold. Each time the patient catches gonorrhoea he is liable to an attack of synovitis or iritis, or suffers first from the one and then from the other. In some cases, however, there has been no new gonorrhoea, although a second or a third attack of inflammation has affected the joints or the eye. Over-exertion of sight has sometimes produced a new attack of severe gonorrhoeal iritis. Generally one eye only is affected; sometimes the same eye suffers repeatedly. In other instances, first the one eye is attacked, and next time the other is inflamed. Rarely are both eyes affected at once.

Mackenzie¹⁶ gives details of a case of gonorrhoeal iritis in which the recurrences, not only of the iritis, but also of the arthritis, were frequent, and were spread over some seven years.

The interval which usually occurs between the gonorrhoea and the iritis probably explains the fact that the former as the progenitor of the latter is frequently overlooked. As a consequence, the iritis is fathered by chronic rheumatism or by some other putative parent. Moreover, these "secondary symptoms" of gonorrhoea are exceptional, and therefore unexpected and overlooked. In syphilis, on the other hand, the secondary symptoms are anticipated, because they usually occur. The modern teaching with regard to gonorrhoeal iritis is that the disease is rare. Noyes tells us¹⁷ that "gonorrhoea occasionally causes iritis." de Schweinitz says¹⁸ it is "a rare form of iritis." Berry says the same.¹⁹ Macnamara and Hartridge²⁰ state that "gonorrhoea is an uncommon cause of plastic iritis"; Fuchs²¹ that it "develops in those cases in which gonorrhoea has given rise to a general infection. This latter runs a course similar to that of acute articular rheumatism." Brailey and Stephenson,²¹ however, speak of it as "not infrequent," and J. Hutchinson says,²² "in men, however, the rheumatic affections, whether acute or chronic, which are induced by gonorrhoea, are not unfrequently accompanied by iritis." He thinks that those with a gouty constitution are more likely than others, *cæteris paribus*, to suffer from gonorrhoeal iritis.

There is no doubt about the rareness of the association of acute rheumatism and iritis; so rare, indeed, is it, that it may be fairly considered to be casual rather than causal. Hartridge²³ tells us that he has never seen it; Poynton and Paine,²⁴ "have little doubt that it is a rare but not unknown event." Hutchinson²⁵ states that

Iritis "in conjunction with rheumatic fever of the ordinary form is almost unknown, and even in cases in which patients suffer from repeated attacks, as is sometimes seen, the eyes usually remain free. So soon, however, as changes of type occur, the disease showing a tendency to attack the smaller joints, or to affect only single joints, or to pass into the chronic form, then we get the liability on the part of the eye to suffer." And, again, he says:²⁴ "All observers will admit, I think, that iritis associated with ordinary rheumatic fever is infinitely rare."

With respect to iritis associated with chronic rheumatism—that is, an iritis due to rheumatism pure and simple—its very existence is almost questioned by some authorities. Monteath²⁶ was of opinion that rheumatic

inflammation "sometimes attacks the iris." Lang²³ does "not regard rheumatic iritis as a common affection." Hartridge²³ is of opinion that cases of rheumatic iritis are extremely rare; and Hutchinson²⁴ says that "iritis in association with either acute or chronic rheumatism is a thing we scarcely ever observe. And, again,²⁵ "It is, I think, decidedly exceptional for rheumatism pure and uncomplicated to show any tendency to attack the tissues of the eye." Brailey and Stephenson,²⁶ however, consider that "there can be no doubt that rheumatism (acute or chronic articular) is capable of predisposing to inflammation both of the iris and of the ciliary body." Noyes²⁷ believes that after syphilis "rheumatism and gout are next in potency as causes" of iritis. Macnamara and Hartridge²⁸ think that

Plastic iritis forms probably not less than 85 per cent. of the cases of iritis which we meet with in practice, the greater number being connected with exposure to sudden changes of temperature, or to damp and cold—rheumatic iritis, as it is commonly called.

The late Mr. John Griffith published in 1900²⁵ a series of cases of gonorrhoeal iritis, all males, in which the iritis did not follow the gonorrhoea until after the expiry of from four to fifteen years; and he was strongly of opinion that iritis is not only liable to present itself as a complication, but also as a sequel of gonorrhoea. I have little doubt not only from his writings, but also from his expression of opinion in conversation, that Mr. Griffith was extremely doubtful about the existence of a true rheumatic iritis.

The more I see (he writes)²⁶ of rheumatic iritis the more sceptical I become of the real rheumatic nature of the affection; and, without wishing to thrust my views too obtrusively before you, I cannot help expressing a belief that a great number of the cases of so-called "rheumatic iritis" are gonorrhoeal in origin.

Mr. Lawford, however, at the annual meeting of the British Medical Association in 1901,²⁹ expressed himself as very sceptical with regard to iritis, coming on years after gonorrhoea, being due to it. If I may judge from my experience of practice in a town where rheumatic patients congregate, I would say that the more I see of rheumatic iritis the less I see of it. There is a distinctive class of cases so labelled who come to Bath. They correspond with each other in a striking manner, and I believe the similarity is no imaginary one. Almost invariably men, comparatively young as a rule, of good health and physique otherwise, they tell the same tale of an iritis accompanied by or preceded by "rheumatism" in the joints of the lower limbs. Walking with a stick, or even on crutches, they tell the same tale of an acutely painful iritis, with intense injection of the conjunctiva, which has relapsed time after time over a period of months or years; and that, having tried every drug under the sun without avail, they have come to Bath as a final resource. They know all about their treatment and whether atropin suits them, or if they have to resort to duboisin, and are practical experts as to the best sedative to relieve the pain. On questioning them they confess to a gonorrhoea so many months or years before the onset of their malady, but they are sure there is no relationship of a parental nature between the gonorrhoea and the iritis.

How long an interval may elapse between the primary gonococcal infection and the toxæmic aftermath is illustrated by Mr. Griffith's list of cases, if we accept his views. He concludes that it is possible for an attack of gonorrhoeal iritis to be the result of a gonorrhoea which has been contracted as long as twelve years previously, and he sums up his views with the statement that gonorrhoea is a "disease as constitutional and as difficult of eradication as syphilis."

Mr. Treacher Collins²⁷ has recorded three cases of iritis following gonorrhoeal rheumatism, in one four years after, in another eight years after, and in the third twenty-one years after, but he says that it was "to him very difficult to believe that iritis twenty-one years after could be attributed to the gonorrhoea; there must be something else."

Recently Higgens²⁸ has expressed his views with regard to the prevalence of gonorrhoeal iritis. "Iritis," he says, "dependent on rheumatism, no doubt frequently occurs, but my experience is that a very large number of cases so-called are due to the poison of gonorrhoea, and the worst cases with few exceptions have this origin." Further on he says:

The probability is that in many men who have had gonorrhoea severely and frequently there is left for any number of years in some part of the urino-genital apparatus a very much attenuated virus, which gives no trouble locally, but from time to time becomes more active, and, though still setting up no local irritation, is capable after absorption of causing inflammation in synovial membranes or in the iris; in fact, it looks almost as if the iris becomes on occasions an excretory organ and tries to eliminate the poison, receiving considerable damage to itself in the attempt. There must also be a personal element or an idiosyncrasy in those who suffer, because the proportion of persons who have iritis to those who have had gonorrhoea is very small indeed.

By the kindness of Drs. Carter, Bannatyne, and Preston King, the physicians to the Royal Mineral Water Hospital, Bath, I have had opportunities of seeing cases of iritis admitted to that institution, not in consequence of the eye disease, but because they were the victims either of gout, rheumatism, or rheumatoid arthritis. In looking through my list I find that during the last twenty years—that is, from 1888 to 1907—I have been asked to see 21 patients at that hospital because they were suffering either from acute or from subacute iritis. This does not mean that I have consequently seen all the cases that have occurred, but my impression is, and I believe it is well founded, that during that period I have at least seen almost all the patients suffering from active iritis that required treatment during those twenty years. The following are short notes of the cases:

CASE I.—F. F., aged 35, male. Admitted for rheumatism in the knees, left foot, hands and left shoulder. There is a history of syphilis fifteen years previously. Acute rheumatism four years ago, followed a few months later by left iritis. A relapse of the iritis took place whilst undergoing the bathing treatment in the hospital.

CASE II.—E. W., aged 40, female. Rheumatism of the left foot and shoulder. Has never had acute rheumatism. Has had left iritis for a month.

CASE III.—J. V., aged 33, male. Rheumatism of left knee, arm and elbow; right knuckles. Right iritis; the eye has been getting dim for three months, he says.

CASE IV.—P. M., aged 27, male. Rheumatism in the big joints. He has had two attacks of gonorrhoeal rheumatism, and has gleet now. Has never had acute rheumatism. Has attended at Moorfields for iritis, and has had an attack for the last fortnight, which is now subsiding.

CASE V.—H. G., aged 42, male. A London cabman who is a patient in consequence of stiff shoulders, caused, he says, by exposure to weather. He has never had acute rheumatism. He has left iritis and the pupil is contracted and fixed. He lost his hair fifteen years ago when he was laid up with a fever, he says.

CASE VI.—F. H., male. Gonorrhoea eighteen months ago. Rheumatism in the joints fourteen months. Double iritis four months, with posterior synechiae in the right.

CASE VII.—W. B., aged 32, male. Six or seven attacks of gonorrhoea in the last ten years, he says. He had rheumatism in the hips six years ago and was ill for ten months. He had a second attack of rheumatism two years ago. He had left iritis last year (October, 1900) and was attended by Dr. Little of Manchester. Now (September, 1901) he has a relapse in the left eye, with posterior synechiae.

CASE VIII.—A. D., male. Gonorrhoea, December, 1900; "acute rheumatism," January, 1901. In-patient Royal Mineral Water Hospital September, 1901, with rheumatism of the left shoulder, wrist and both knees. He has left iritis, with signs of old attacks.

CASE IX.—J. J., male, aged 39. Gonorrhoea, 1881; chronic rheumatism and sciatica, 1894; right iritis, 1896, and has had attacks in the left since; right iritis again in 1901, in the Royal Mineral Water Hospital.

CASE X.—T. G., male, aged 30. Gonorrhoea 1888, and again in July, 1900. Rheumatism began in the right knee April, 1900, and has appeared in other joints since; he came into the Royal Mineral Water Hospital October, 1900, in consequence, and was there attacked by right iritis for the first time.

CASE XI.—R. B., male, aged 38. Gonorrhoea, 1890; muscular rheumatism, 1895. Admitted into the Royal Mineral Water Hospital for chronic rheumatism, October, 1902, but no joints apparently affected; but there was difficulty in opening the mouth, and he had pains in the ankles and knees. He had discomfort in the eyes, with inflammation and loss of sight, in 1896, which lasted six months. He has had relapses since, and has posterior synechiae.

CASE XII.—J. B., a young man, admitted into the Royal Mineral Water Hospital, October, 1902, for chronic rheumatism. Had right iritis and gonorrhoea.

CASE XIII.—E. T. M., a male, admitted into the Royal Mineral Water Hospital, 1902, giving a history of gonorrhoea in 1886, followed very soon by right iritis, and then by rheumatism in the knees and hips. He has had four or five attacks of iritis since, but no rheumatism again until twelve months ago. Since then he has not been free. He usually gets gleet with the rheumatism.

CASE XIV.—J. Y., a male. Acute rheumatism, 1885, fourteen days after contracting gonorrhoea. He has had acute rheumatism twice since; left iritis, 1895, and has had relapses.

Admitted into the Royal Mineral Water Hospital, 1902, for chronic rheumatism.

CASE XV.—F. T., male. Admitted into the Royal Mineral Water Hospital, 1902, for rheumatism in the knees, left foot, and wrists. There is a history of gonorrhoea, and he has had slight right iritis four days. The left eye shows signs of previous iritis.

CASE XVI.—G. C., male. Admitted for rheumatism in the feet, ankles, and knees of nine months' duration; he had gonorrhoea nine months before that. Left iritis with hypopyon after admission.

CASE XVII.—Male, aged 39. Gonorrhoea, 1882; acute rheumatism, 1883; iritis, 1884. Posterior synechiae in both eyes.

CASE XVIII.—L. M., female. Attended St. George's Hospital for rheumatism and gonorrhoea in 1907. On admission to the Royal Mineral Water Hospital a month later she had left iritis.

CASE XIX.—H. P., male, aged 18. Admitted 1892, left iritis three days; it began with pain in the stomach and left side of the head. There is no history of rheumatic fever, but the knees and legs became stiff after working in the damp. History of gonorrhoea three months ago, which lasted ten weeks, but is well now. He has enlarged tonsils but no history of syphilis.

CASE XX.—F. F., male. Gonorrhoea twelve years ago, followed two years later by rheumatism in the knees, ankles, and one shoulder; gonorrhoea again a year ago, followed by a recurrence of the rheumatism. Right iritis a few days ago, and now he has hypopyon.

Such are the meagre notes of all the cases of iritis I have seen at the Royal Mineral Water Hospital during twenty years. I regret that I did not take them more fully. The list is remarkable from the fact that it contains only two women to eighteen men. The total number of male patients admitted to the Royal Mineral Water Hospital, however, always exceeds that of women in consequence of the distribution of the beds. From the published reports of the hospital during the last twenty years, 1888 to 1907 inclusive, I find that there were 17,197 admissions for rheumatism and rheumatoid arthritis. Of these about 54.75 per cent. were men and 45.25 per cent. women. The hospital is usually full, and it contains 155 beds. Patients suffering from acute iritis are considered unsuitable for admission during the attack, and in the cases enumerated the attack has begun almost always after admission; the only exceptions would be in the cases of patients who had omitted to mention the iritis in their application.

With regard to rheumatoid arthritis it will be noticed that in no case has a patient been attacked by iritis during treatment at the Royal Mineral Water Hospital in twenty years, although as many as 5,304 patients afflicted by rheumatoid arthritis passed through the wards in that period. The deduction that iritis is uncommon in rheumatoid arthritis would, however, be, I think, inaccurate, for on looking through my notes of 83 patients from that institution who suffered from rheumatoid arthritis and were examined with the help of a mydriatic (18 men and 65 women), I find that 2 men and 1 woman showed signs of old iritis—that is, in 3.61 per cent. This is a sufficiently high percentage to hint at a connexion between the iritis and rheumatoid arthritis. Why, then, do we not see them associated in Bath? Patriotism might prompt me to propound the proposition that in patients suffering from rheumatoid arthritis the Bath waters prevent the onset of iritis, but I forbear and suggest the more prosaic inference that iritis is a symptom of the earlier stages of the disease. The patients in the Royal Mineral Water Hospital I imagine rarely come in quite the early stage of rheumatoid arthritis, but are most frequently cases in which other treatment has been tried with more perseverance than success. And so it may be that at first, whilst the virus of rheumatoid arthritis is young, flushed with its successful attack on the joints, it gives battle to the iris. Later on the attenuated virus, having accomplished its evil life's work, lapses into senility and leaves the arena strewn with joint deformities and, it may be, with lental and iritic stigmata.

The view that there is any decided connexion between rheumatoid arthritis and iritis does not seem to be in consonance with the opinion of J. Hutchinson; at least, he says³⁴ that iritis is rare "in connexion with that type of arthritis to which the name of crippling arthritis may be given." (Rheumatoid arthritis?) Fuchs⁴⁰ says that iritis occurs as a result of arthritis deformans.

In the list it will be noticed that there is very little mention of syphilitic iritis, although it is usually considered that somewhere about half the sum total of cases of iritis is due to syphilis. The explanation is the simple one—that people suffering from syphilis do not come to

Bath in great numbers for mineral-water treatment. Gout, too, as a cause of iritis is conspicuous by its absence, although in the twenty years 2,159 cases of gout have been admitted into the wards. As a factor in the causation of iritis gout was formerly almost universally recognized, but the pendulum now seems to be swinging in the opposite direction. It had full credit from Monteth²⁹ "Gout," he says, "may appear as an iritis"; and Middlemore³⁰ is emphatic that "gouty inflammation of the iris occurs, as its name implies, in persons who are constitutionally predisposed to gout." In more modern days the tone is less confident, and amongst others Juler³¹ cautiously remarks "that a gouty diathesis is also thought to predispose to iritis"; and Brailey and Stephenson³² go so far as to say that "comparatively few modern writers enumerate gout among the causes of iritis." Hutchinson³³ however, is of opinion that many cases of relapsing cyclitis are due to the inherited disease, although the patient himself may manifest no trace of podagra. Nettleship³² again, speaks of gout as apparently a cause of some cases of both acute and insidious chronic iritis.

CONCLUSIONS.

The list of cases shows at least the frequency of what I venture to call the syndrome—gonorrhoea, arthritis, iritis, the first complicating the others, or, it may be, preceding them more or less remotely.

Sixteen patients out of twenty confessed to gonorrhoea, and, even allowing for the prevalence of the lues, this seems to be a higher percentage than can be accounted for by other theories than cause and effect. After due allowance for the circumstance that patients suffering from other forms of iritis, such as tuberculous, malarial, diabetic, etc., less often come to Bath for hydrotherapeutic treatment, I think it is fair to surmise that gonorrhoeal iritis is much commoner than some authorities are inclined to allow. The connexion of iritis with rheumatoid arthritis is less clear, and I leave it to others to say whether there is, in the first place, any connexion whatever, and if so, in the second place, whether the iritis is the result of the rheumatoid arthritis, or whether it and the rheumatoid arthritis are both the offspring of some common ancestor. With regard to gouty iritis, I have already referred to its rareness at the Royal Mineral Water Hospital; and such cases, so-called, as I have seen in private lead me, in spite of so high an authority as Hutchinson, to join the sceptics and to avow myself an agnostic.

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THE threatening outlook for Natal from a medical point of view, to which attention was drawn in a review of the situation in these columns some months ago, is not likely to be improved by the antagonism which exists between the municipalities and the central Government. This was brought clearly into evidence at a kind of Mayoral Congress in the spring. A claim was made that the Public Health Act of the Colony ought to be amended so as to leave the municipalities entirely free from authoritative interference on the part of the medical officer of health of the colony, and a resolution embodying this feeling was carried unanimously. Similarly, a resolution was passed to the effect that the smaller municipalities should have as complete control over their own medical officials as was accorded to one or two of the principal cities of the colony.