

ONE HUNDRED CASES

of

RHEUMATOID ARTHRITIS.

- by -

E. Milliken Goldie.

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ONE HUNDRED CASES

- of -

RHEUMATOID ARTHRITIS.

Aetiology, Symptoms and Diagnosis.

CHAPTER I.

Nomenclature.

There are few, if any, diseases which have received so many names as the one I have taken for my Thesis. From the 14 different titles which have at various times been applied to this disease I have chosen that of Rheumatoid Arthritis.

This is the name given to the malady by Sir A.Garrod^x in 1876, and it is one which is becoming, if it has not already become, the most popular term for the affection, at any rate in this country. It is under this name that Dr.A.E.Garrod, who has perhaps collected more cases than any other observer in this country, has so ably written.

Dr.Bannatyne of Bath has also written a book under the same title (1896). Of the other synonyms perhaps those best known are Arthritis Deformans and Osteo-Arthritis.

^x Gout & Rheumatic Gout 1876.

The former of these terms was given by Virchow ^x and is commonly used in Germany and sometimes in this country.

Naturally as such a diversity of terms has at different times been applied to this disease much difficulty has arisen in identifying the disorder. One term in particular, still frequently used in England, is most misleading. I refer to the name "Rheumatic Gout", which was first given by Fuller ^β and has since received the support of Hutchinson.

I have come to the conclusion and I hope shall be able to help to demonstrate that the disease is a distinct one and although in some ways allied to Rheumatism and Gout yet to be clearly differentiated from these two latter diseases.

The term Rheumatic gout evidently implies a mixture of Rheumatism and Gout, unless as sometimes happens the diagnostician being in doubt as to the real nature of the disease is sheltering himself behind the dual term.

In the large Institution in which I am at present working, we frequently have cases sent in as Rheumatic Gout. Such cases on investigation we usually find to be distinctly Rheumatism or Gout or on the other hand equally distinct cases of Rheumatoid Arthritis.

Of course it may be objected that the word Rheumatoid im-

^x Virchow's Archives XLVII 1869.

^β Fuller "Rheumatism, Rheumatic Gout and Sciatica" 1852.

plies that the disease is like rheumatism. But so it is in many respects. It may be like without actually being Rheumatism just as for instance Typhoid is in some ways like Typhus and yet is a distinct disease. I have therefore chosen Rheumatoid Arthritis as the name for this Thesis.

CHAPTER II.

Aetiology.

(a) HEREDITY,

Doubtless sometimes plays a part in the causation of Rheumatoid Arthritis. But an accurate history of Heredity is difficult to obtain.

We may often get a history of Rheumatic Joint trouble in parents, or more remote ancestors, but in most cases of course we cannot be sure that such history is of Rheumatoid Arthritis. It may have been acute rheumatism, chronic rheumatism or even gout.

So that where we have obtained a Family History of rheumatism we can go little further than to conclude that the patient under examination has an arthritic diathesis.

It is well known that Gout and Rheumatism are often hereditary, and judging from analogy it would not be surprising to find it playing an important part in Rheumatoid Arthritis.

Heredity as a cause has been recognised by several eminent writers including Heberden ^x and more recently by Charcot [∫] who found it in 11 out of 41 cases.

A.E.Garrod ^{xx} out of 500 cases found 84 (16.8 per cent) in which family histories of articular disease, probably rheumatoid arthritis, were obtained. But the last observer found a percentage of 43.2 of arthritic disease.

In my own cases I placed no reliance on a history of heredity being one of Rheumatoid Arthritis. Under the heading of Heredity I have included those whose parents &c. suffered from some form of arthritis - rheumatic or gouty. My 100 cases shewed the following percentages, no rheumatism in family in 47 per cent of cases. One or more parents had rheumatism, rheumatic gout or gout in 27 per cent of cases.

Considering the great frequency of rheumatic joint trouble a history of 27 per cent is but a moderate number. Only three of my cases gave very marked histories of heredity. They were all Males. In case 60, all the males in the family had Gout.

Case 63 said his father and two brothers died of Rheumatism and case 83 said that his mother, brother and sister had the same kind of deformities that he had. This last case is a very well marked one of which photo is given on page ?

x Heberden - Commentaries, appendix p.417.

∫ Maladies des Vieillards 2nd Ed. p.223.

xxx A.E.Garrod - Rheumatism and Rheumatoid Arthritis p.238.

(b) SEX.

It is universally acknowledged that Rheumatoid Arthritis is more common among Females than Males. It is equally well known that Gout is commoner in Men than women. This inequality in the incidence of the two diseases indicates an important difference in the Aetiology and nature of Rheumatoid Arthritis and Gout. If Rheumatoid Arthritis had a gouty origin one would expect it to be at least as common among men as women.

But the statistics of most observers show that they have found the disease more often in women than men. Haygarth ^x out of 34 cases found it in only one man.

Dr Bannatyne ⁵ in 76 cases had 9 males. A.E.Garrod ^{xx} (500 cases) had 411 Females to 89 Males (82.2 and 17.8 per cent.) Bannatyne ^{xxx} quotes the opinion of Senator &c., that in men the larger joints are more prone to be affected, in women the smaller.

My statistics show that 88.8 per cent of the men had their knee joints affected against 72.7 per cent in the Females.

It is usually assumed that the larger proportion of cases amongst females may be accounted for by the presence in them of genito-urinary disorders.

In each of my Female cases I went into the history as to

^x Clinical History of Diseases 1805.

⁵ Rheumatoid Arthritis (1896) p.17.

^{xx} " " (1890) p.240

the number of children, the number of miscarriages and whether there had been easy or difficult labours.

38.1 per cent described their labours as having been difficult.

No less than 51% had had one or more miscarriages, and 50 per cent had had as many as six children and upwards, 23.6 per cent 10 children and upwards.

In two cases (40 and 41) the rheumatoid arthritis followed miscarriages which were attended by severe haemorrhage. Each of these cases was very anaemic when examined by me for Rheumatoid Arthritis.

Of my 100 cases no fewer than 45 are Males. One obvious reason for this is that in the large infirmary where I am working (770 beds) we have about twice as many men as women.

Another possible reason however for this unusually large proportion of males is given later on.

(c) AGE.

Dr. Garrod^x shows that the incidence of the disease in females increases with each 5 years period up to the age of 50. But in males the maxima are between 30 and 35 and 50 and 55.

He also points out that it may occur in children. I have not been able to obtain a case occurring in childhood.

It may occur in young adults and as Garrod says these cases

x Treatise on Rheumatism & Rheumatoid Arthritis. p.240

are apt to be more acute and rapidly spreading.

My two youngest cases are good examples of this (Cases 70 and 83).

The following is an analysis of the incidence of the disease in 10 years periods in my cases:-

	<u>Females.</u>	<u>Males.</u>
Between 10 and 19	-	-
" 20 " 29	3	8
" 30 " 39	5	8
" 40 " 49	9	9
" 50 " 59	15	6
" 60 " over	11	7
	<hr/>	<hr/>
	43	38
Unreliable histories	<hr/> 12	<hr/> 7
Totals	55	45

100

(d) EMOTIONAL CAUSES.

Dr. A. E. Garrod says that he has frequently found mental anxiety due to business or family trouble preceding the onset of Rheumatoid Arthritis. He also mentions that during the course of the malady in many cases worry invariably increases the articular pains.

Two of my patients emphatically gave worry as a cause of

their disorder (cases 30 and 57).

(a) DAMP AND COLD.

Adams x points out that it is especially common in Holland, a low-lying damp country.

But as Bannatyne ^β says it is not unknown in dry climates.

If therefore damp and cold cannot be proved to be actual causes of Rheumatoid Arthritis they doubtless favour the disease.

It is quite a common thing to hear patients who suffer from the disease say that their pains are much worse in damp cold weather.

I have even heard patients describe themselves as barometers - that is that they say they can anticipate the onset of cold or damp weather. The class of society from which for the most part I have collected my cases is one much exposed to cold and damp. This is especially true of the males, most of which have been employed in docks or on the river or sea.

It is therefore not surprising that so many men have given me "damp or cold" as in their opinion a cause of their disorder.

Out of 45 cases, 21 have given this as a cause.

Some of the women too gave me damp or cold as a cause - 6

x On Rheumatic Gout. p.15.

β Rheumatoid Arthritis p.21.

out of 55 examined. .

(f) INJURY.

It sometimes happens that Rheumatoid Arthritis starts in a joint which has been previously injured.

10 per cent of my cases gave definite history of injury to a joint in which afterwards is said to have started the Rheumatoid change (See Table of Cases).

A.E.Garrod ^x says that not only does Rheumatoid Arthritis start in a joint which has previously undergone traumatic injury, but that it often starts in a joint injured by acute rheumatism, gonorrhoeal rheumatism or gout. It is more than probable that the poison of Rheumatoid Arthritis, whatever its nature may afterwards prove to be, finds a suitable nidus in a joint weakened by traumatic or inflammatory injury.

21 per cent of my cases gave previous history of acute rheumatism. A few of these histories I knew were reliable but the majority were very questionable.

(g) OVER INDULGENCE IN MALT LIQUORS.

It is generally acknowledged that Rheumatoid Arthritis - unlike Gout - has little to do with over indulgence in food or drink.

But such an exceptionally large proportion of males have I

^x Rheumatism & Rheumatoid Arthritis, page 244

obtained that I had to look for some cause for this.

Now it is notorious in the district (East London) from which I have obtained most of my cases that the over indulgence in malt liquors amongst men is exceedingly common. Therefore in all my male cases (see Table) I tried to ascertain histories of such indulgence.

No fewer than 16 out of 45 acknowledged themselves to have been heavy beer drinkers, (two more had been great port drinkers) of the remaining 27 males, 23 said they had been "moderate" ale drinkers. Doubtless many of these moderates were so only when judged by their own standard.

Is this exceptionally large proportion (45 per cent) of Male cases partly to be accounted for by the prevalence of excessive ale drinking? I am inclined to think so.

Is it not possible that the habitual over indulgence in malt liquors may set up changes of a gouty nature in joints, and that such changes may render the joints suitable soil for Rheumatoid poison to flourish in?

CHAPTER III.

Symptoms.

(a) PREMONITORY SYMPTOMS.

In some cases there are none of these. We often gather from the histories patients give that the disease seemed to strike

them suddenly in one or more joints without warning. The most noteworthy premonitory symptoms are tingling and numbness in the extremities.

A.E.Garrod ^x quotes cases in which there were sensations of pins and needles in hands and arms some months before affection of joints.

Dr.Spender ^φ has drawn attention to another symptom occurring very early, namely palpitation. Dr.Garrod ^{xxx} has also found this. He says that in some instances he has observed a pulse-rate of 130 without apparent cause.

Dr.Spender ^{xxx} says that neuralgic pain in the ball of the thumb is almost pathognomonic of the earliest stages of Rheumatoid Arthritis.

Spender has also described local sweating even in cold weather as a premonitory symptom.

A few of my patients have had tingling in joints preceding the onset of the disease but I have not been able to obtain any history of other premonitory symptoms above mentioned.

(b) ESSENTIAL SYMPTOMS.

These are referrible mostly to the joints.

The earliest symptom is swelling of one or more joints.

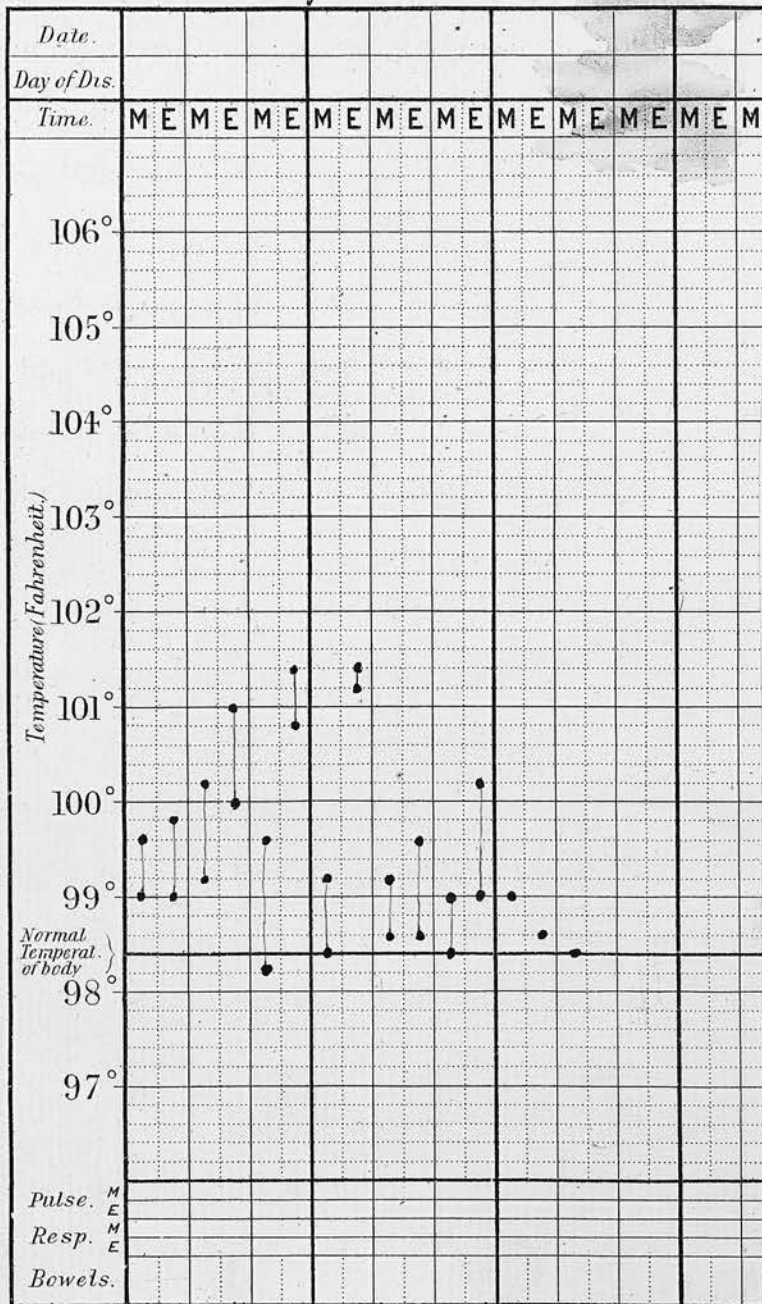
The skin over the swollen joint may be reddened or bluish

^x Rheumatism & Rheumatoid Arthritis. p.245

^φ Osteo-Arthritis. 1889. xx Loc Cit. 1889

^{xxx} Loc. Cit. 1889.

Name Case 72. Male Age 50 D



Temp. in Hand
Arilla

(COPYRIGHT.)

A VERTICAL LINE
F
Printed

in colour. The joints assume various shapes the most common being ovoid or spindle shaped. This is especially the case in the inter-phalangeal and wrist joints.

The enlargement may be due to fluid or swelling of the synovial membrane.

In a chronic case the joints are apt to assume more irregular shapes from enlargement of the ends of bones.

Still greater irregularities may be caused by osteophytic outgrowths, occasionally certain bursae may become distended with fluid causing bulgings.

The temperature of the part in which Rheumatoid changes are going on is often raised one or more degrees: above the temperature in axilla. This was well shewn in a case I had under my care recently. An acute exacerbation arose in the man's right hand lasting about 5 days. The temperature in this patient's right hand and right axilla were taken. For 6 days whilst the hand was swollen and painful its temperature was higher than in the axilla. But when the hand became better its temperature became actually lower than in the axilla. See temperature chart ^(see opposite) and photo. ^{Page 42.} The photo was taken when the acute outburst in hand had subsided. The deformities here seen were much the same before the acute changes occurred.

TO THE TOUCH.

The most important conditions in the joints under this head-

are:-

(a) A tense swelling with fluctuation due to fluid.

(b) Pulpy or doughy swellings with little or no fluid in joints. The joints often feel as if they had been macerated. Swellings of this nature are due to changes occurring especially in the synovial membrane.

(c) Joints much enlarged often irregularly. They are hard and bony to the touch or sometimes slightly doughy if the synovial membrane is thickened, sometimes the joint is quite immoveable. This is due to the cartilage having become eroded and bony ankylosis having taken place. More often there is slight movement due to fibrous ankylosis.

There is often much grating and crackling on passive movement. This is due to the roughened ends of the bones the cartilage having become eroded.

Such are the principal signs found on palpation.

PAIN.

This is often at certain stages a prominent symptom. It is usually so in the acute stages of the disease. In the sub-acute and later stages too when the cartilages have become eroded and the ends of the bones bared pain is often severe. This is especially the case of course on movement of the affected joint.

The pain is often worst at night the patient complaining of the limbs starting suddenly giving rise to shooting pains.

Together with the pain the patient frequently complains of grating which in some cases is audible.

The pains in the joints sometimes cease when ankylosis has taken place, the reason of this of course being that the ends of the bones no longer move on each other.

Synovial Cysts.

These are sometimes seen near joints. Merant Baker^x ascribes these to hernial protrusions from synovial cavities. They may migrate some distance from their parent joint and become detached from their original moorings. Case 83 had some of these behind right knee. He had them excised at St. Bartholomews' Hospital.

Fluid.

Synovial fluid is sometimes present to some extent in affected joints. It is occasionally present in considerable amount. It may become absorbed and may again accumulate. I have found it most frequently in the knee joints.

Suppuration.

In none of my 100 quoted cases nor in any other have I ever found pus to accumulate in a joint suffering from Rheumatoid Arthritis.

It is universally acknowledged to be an exceedingly rare

x St. Bart.'s Hospital Reports. 1885 XXI.

complication but three cases have been described by Dr. Mansel Moullin ^x and one by Dr. J.R. Lunn ^δ.

Joint of Origin.

As to the joint or joints in which the disease most commonly originates, Charcot ^{xx} taking 45 cases found it started as follows:-

55.5 per cent in hands and feet.

8.8 " " " great toe.

17.7 " " " hands & feet & larger joints

20 " " " larger joints.

Bannatyne gives ^{xxx}

68 per cent in hands.

16 " " " ankles.

10 " " " knees.

4 " " " shoulders.

2 " " " elbows & hips.

In my 100 cases I could only get a history as to the joints in which disease first manifested itself in 84 cases. These show the following percentages as to joint of origin.

40.4 per cent started in hands & wrists

4.7 " " " " elbows & hips.

x Lancet, 1891 Vol.2 p.125 ^δ Lancet 1896. Vol.1 p.294.

xx Thèse de Paris - 1853. xxx Rheumatoid Arthritis p.103.

10.7	per cent	started	in	Toes.
21.4	"	"	"	" Feet and ankles.
3.5	"	"	"	" Shoulders.
19.3	"	"	"	" Knees.

100

It is a noteworthy fact that all the cases were ^{made} in which the disease is said to have started in the toes.

This tends to show that in men at any rate Rheumatoid Arthritis may have a gouty origin.

It is usual for the disease to spread upwards in a limb e.g. from hands to elbows.

But this is not so much the case with the knee because this is a joint so very frequently affected that the arthritic changes often spread downwards to the feet from the knees.

Joints most frequently affected.

Practically all joints are liable to infection.

THE JAW.

The Temporo-maxillary joint rarely affected in other diseases shows a peculiar liability to become diseased in Rheumatoid Arthritis.

This joint may become so involved that ankylosis is almost complete. So marked may this be that the ^{g.d.}injection of food is only possible through a vacant space caused by the absence of a tooth. Cases 62,67,68 and 78 were good examples of this condi-

tion. They were all male cases. Case 67 had it to so marked an extent that he has twice undergone operation in order to open the jaws. But when I recently examined him the condition had returned in almost as bad a form as before operation.

Dr. Garrod ^x gives the following percentages showing joints most frequently affected. Compared with his percentages are those of Dr. Bannatyne ^φ and my own. My percentages are obtained from observations on the whole of the 100 cases (See Tables) *Page 48.*

A.E. Garrod.

Hands affected in 86		per cent of cases.	
Elbows	" " 25	" " " "	" "
Knees	" " 60.6	" " " "	" "
Ankles	" " 34.4	" " " "	" "
Jaws	" " 25	" " " "	" "
Shoulders	" " 25	" " " "	" "
Hips	" " 14.6	" " " "	" "

Dr. Bannatyne.

Hands	" " 97.4	per cent
Elbows	" " 84.6	" "
Neck	" " 82	" "
Knees	" " 73	" "
Ankles	" " 67.9	" "
Jaws	" " 67.9	" "

x Rheumatism & Rheumatoid Arthritis, p.249.

φ Rheumatoid Arthritis, p.104.

Dr. Bannatyne (Contd.)

Shoulders affected in 61.9 per cent.
Hips " " 12.5 "

My Own Cases - See Tables.

	Hands affected in	97	per cent of cases				
Elbows	"	"	60	"	"	"	"
Neck	"	"	18	"	"	"	"
Knees	"	"	80	"	"	"	"
Ankles	"	"	63	"	"	"	"
Jaws	"	"	14	"	"	"	"
Shoulders	"	"	46	"	"	"	"
Hips	"	"	31	"	"	"	"

JOINTS OF THE NECK.

One cannot help criticising Bannatyne's percentages especially that for the neck (82).

Garrod omits this from his table. I have found the neck affected in much smaller proportion than Bannatyne. My figures show 18 per cent for the neck. But on the other hand I have in a few cases been much struck in a comparative severity of the neck symptoms.

Notably was this found in some of the male cases especially cases 62, 65 and 68. In one case that of a medical man (not quoted in my Table) it was almost the only symptom but was an exceedingly well marked one. Grating could not only be felt by him, but heard by others on movement of the neck.

Naturally ^{it} often happens in a large percentage of cases that patients complain of pain past or present in the region of the neck. But this pain I take it need not necessarily be indicative of arthritis i.e. joint affection. Such pain may be only muscular. So I have included only those cases where the cervical joints have been obviously affected causing limited movement or actual ankylosis.

ELBOWS.

My percentages for elbows agree less with those of Garrod (25) than with those of Bannatyne (84.6).

HANDS.

The percentages obtained by me for the hands are perhaps somewhat fallacious. The reason for this is that in many of my milder cases I identified the disease through examining first the hands which parts obviously lend themselves most readily for examination, nevertheless the two observers quoted give the highest percentages for the hands.

THE KNEES.

The knees are especially liable to become attacked as they are too in so many other diseases, e.g. acute rheumatism. My figures for these joints agree with those of Garrod in being an easy second to the hands.

His percentage for the knees is 60.6, mine is 80.

Symmetrical affection of Joints.

A most important point in the joint changes is the marked symmetry so very often shown.

This symmetry is demonstrated in most of the photos I have taken.

It is a phenomenon of the greatest diagnostic importance, it being in marked contrast to the A-symmetry of Gout and Rheumatism.

Anchylosis.

This occurs in one of three forms:

1. True or bony anchylosis with absolute loss of movement in the joint.
2. Fibrous anchylosis in which slight movement can be elicited.
3. Anchylosis from formation of osteophytes.

Deformities.

There is always a certain amount of deformity in affected joints due at first to swelling in the structures surrounding the joints.

Such deformity may progress no further and may even subside. But on the other hand the deformities usually become more pronounced.

Dislocation of joints may actually occur, partly through increased contractility in one set of muscles and relaxation in another set, and partly through erosion of cartilages and relaxation of ligaments.

The greatest deformities are seen in the two parts most frequently affected namely the hands and knees.

In the hands.

Deformities may be confined to the terminal phalanges in the form of Heberden's Nodes ^x or of the deflection of the terminal phalanges to radial or ulnar side. This latter deformity, namely radial deflection of terminal phalanges occurs much more frequently than their deflection to ulnar side. It is a most characteristic change and one of great diagnostic value in mild and doubtful cases. It is an especially valuable sign when one is in doubt as to the nature of arthritic trouble in other joints

x. For full description of these Nodes see below.

less readily examined such as the hip, shoulders or neck.

This condition of radial deflection of terminal phalanges is beautifully shown in photo No. 3 page 35 Case 5. The deformities of the interphalangeal joints other than the terminal often take on the fusiform type. This is seen in photos.

The knuckle joints are often enlarged causing rounded swellings. In addition another deformity usually results sooner or later from affection of the knuckle joints, and that is deflection of all four fingers from these joints to the ulnar side of the hand.

This causes the characteristic deformity receiving the special name of

Ulnar Deflection.

I have noted the presence or absence of this sign in all my cases. In some it was particularly well marked in others absent.

The actual numbers are:-

Ulnar Deflection absent 34 per cent.

" " slight 23 "

" " well marked 43 "

For diagnostic purposes I found it less useful than radial deflection of terminal phalanges with which deformity it is comparable.

It is a sign which I have almost always found well marked

in advanced cases where there is great deformity and where therefore it is not necessary for diagnosis. On the other hand it was often absent when Rheumatoid changes were obvious in the terminal phalangeal joints.

Thumb.

The Thumb frequently escapes deformity when other parts of hand are affected, unless the case is a very severe one. But one of my cases (76) is exceptional in this respect that it shows greater deformity in the metacarpo-phalangeal joint of thumbs than in other corresponding joints which however are affected to a less extent causing ulnar deflection, see photo 2 page 39.a. But this case is otherwise typical in that the deformities are most symmetrical.

Fingers.

The Phalangeal joints may become actually dislocated, giving rise to most marked deformities of the flexion or extension type. (See especially photo 1 page 39 case 6 left ring finger.)

The Wrists.

These are sometimes much enlarged occasionally being much more deformed than the fingers, (see photos 1 + 2 page 40 case 78). The swellings in this region are most often of the ovoid type. The enlargement of these joints are often brought more

into relief through atrophy of the muscles of the forearms. This point is also well shown in last named photo.

The Elbows.

Do not show the deflection type, but they are often flexed. They are sometimes much deformed and partly ankylosed,- case 78.

The Big Toes.

Are usually turned outwards sometimes at a right angle with the other toes. See photo / page 39.a case 83.

The Knees.

Charcot x says that:

(a) The lower end of the femur projects in front of the head of the tibia.

(b) The internal condyle becomes more prominent.

(c) The patella rests on outer condyle.

(d) The head of the fibula projects.

I have been able to confirm these points in several cases.

Photo / page 39.a. case 83 shows the first second and fourth of these points very well.

Photo / page 40 case 78 shows even better the great prominence of internal condyle. The knee joint nearly always be-

x Charcot's Lectures on Senile Diseases, p.187 (Sydenham Society).

comes flexed to some extent, sometimes enormously so. This condition is well seen in photo 2 page ⁴¹79 case 79 and in photo page 37 case 8.

The Hips.

These joints usually retain their mobility and seldom show marked deformities. Even when deformities are present it is very difficult to detect them owing to the depth of the joints.

HEBERDEN'S NODES.

These are small bony outgrowths from the articular ends of the bones ^{of} the terminal phalangeal joints of the fingers. They may however sometimes be present in the other interphalangeal joints.

They were first described by Heberden in 1804 in his "Commentaries".

These outgrowths show themselves as little rounded prominences near the joint of the terminal phalanges.

Often they occur on each side of the joint, sometimes on one side only. They can always be very readily felt when the examiner runs his fingers along the sides of the patient's fingers. They may or may not be painful to the patient. Often the patient has never noticed their presence. But commonly there is a previous history of tingling or pain, which symptoms are important

premonitory ones.

Occasionally these Nodes are very disfiguring, the terminal phalanges in some cases being at, or almost at a right angle to the articulating bone. This kind of deformity is very well shown in Photos 3 & 2 pages 35 & 38 cases 5 and 23. Here (case 5) as is usually so characteristic of the disease symmetry is shown the terminal phalanges in each hand being deflected to the radial side. This is the usual side for them to be turned to. But occasionally the terminal phalanges are turned to the ulnar side.

These osteophytic growths show no tendency to ulcerate and as a rule give little trouble apart from their liability to produce deformities. This absence of ulceration is in marked contrast to gouty deposits in the same region.

I have found the presence of these nodes to be a sign of the first diagnostic importance except in very well marked cases where the sign is unnecessary for diagnosis, and in acute cases.

Of course in the early stages of an acute case the bony changes necessary to cause these nodes have not had time to take place. The sign is the more useful because the fingers are so very ² readily examined and the joints are so little covered that changes show themselves graphically and quickly. How much more difficult it would be had we to look for early structural changes in a joint so deeply situated and awkward to examine as the hip

joint.

Another reason why the presence of Heberden's Nodes is so important a sign is that they are found in such a very large proportion of cases.

I have been unable to discover any statistics of their occurrence. But in all my cases I have noted their presence or absence with the following results:-

Heberden's Nodes present in 96 per cent of cases

"	"	well marked	76	"	"	"
"	"	slight	20	"	"	"
"	"	absent	4	"	"	"

In most cases where they were slightly marked other deformities in the hands were excessive. I have been struck and surprised at this. One would naturally expect that if the Nodes are so often present they would be well marked in an advanced case. But I have not usually found it so. I cannot offer any explanation of this unless it be that in advanced cases the Nodes tend to become absorbed.

Conversely I have found, though not so often, that where the nodes are exaggerated that deformities elsewhere are not in proportion. Case 5 for instance can walk almost perfectly and use her arms well, though the terminal phalangeal joints are so deformed.

It is a much debated point as to whether these Nodes are gouty

or not. Heberden ^x held that they were not. But Begbie ^β thought that they were closely connected with Gout.

Charcot ^{xx} was of the same opinion as Heberden. Sir A. Garrod ^{xxx} says he has seldom seen them in those suffering from true gout.

Dr. A. E. Garrod ^γ says he has 'seen such nodes in cases in which there were clear histories of gout, but no other articular affection.'

Dr. Bannatyne ^δ finds them most frequently in rheumatoid arthritis, although not in its acute form, but also in gout. He remarks 'is it not possible that they are common to the two diseases?'

I am of opinion that the occurrence of nodes in gout is accidental, and that they are essentially characteristic of rheumatoid arthritis, and not of gout. As before mentioned I have found the presence of Heberden's nodes in Rheumatoid Arthritis to be remarkably frequent. When Nodes are present in Gout they may I think be accounted for in the following way.

As is so well known, the deposition of gouty material near a finger joint often produces deformity and even dislocation of

x Commentaries 1804.

β Contrib. to Practical Med. 1862. p. 28.

xx Oluvres Completes. Tome VII 1869, p. 217

xxx Gout and Rh. Gout 1876 p. 503. ^γ Rheum. & Rh. Arthritis p. 266

δ Rheumatoid Arthritis p. 70.

that joint.

The thickening due to the deposit, together with the partial dislocation of the terminal phalanx, naturally produces a nodulation at the joint. Heberden's nodes on the other hand are due to bony enlargement.

Gouty nodes are well seen in photos A+B p. 35. In No. A nodes are seen in middle finger of right hand and in No. B in ring finger of right hand and in little finger of left hand.

It is a noteworthy fact that in No. A except in the finger named there are no nodes. Now in fingers where the true Heberden's nodes of rheumatoid arthritis are found it almost never happens that such nodes are found only in one finger. Here again symmetry is usually shown in Rheumatoid Arthritis and the want of it in Gout.

Cardiac Complications.

It is rather the absence than the presence of cardiac disease which has to be noted in Rheumatoid Arthritis.

Out of my 100 cases only 13 had valvular disease of heart and of these 4 had previously suffered from acute rheumatism.

As acute rheumatism so very frequently causes valvular disease it is probable that it was the cause of the heart disease in those 4 cases. So excluding these 4 cases presumably caused by acute rheumatism, we have left only 9 per cent of cases suffering

from valvular disease concurrently with Rheumatoid Arthritis. If additional evidence were needed to point out that rheumatoid arthritis is a disease distinct from acute rheumatism it is forthcoming in the fact that so few cases suffering from rheumatoid arthritis also suffer from valvular disease.

Tachycardia.

Increase in the pulse rate was pointed out by Charcot ^x.

More recently the same phenomenon has been shown by Spender^β.

The latter observer points out that in an acute case it is usual for the pulse to become at once rapid and to remain so for years. He also says that the pulse may be as rapid as 120 even though at the same time the body temperature is normal and the heart shows no sign of being affected. I have very often found this to be the case. In all my cases I have noted the pulse rate thereby bringing out clearly the frequent occurrence of tachycardia in an otherwise normal heart. In 21 per cent of cases the rate was 100 and upwards in patients having no valve lesions. I was always careful to record the rate of the heart's beat towards the latter end of my examination of the patients, so as to avoid possible exaggeration of this phenomenon, it being probable that a patient's pulse would be quicker at the commencement of an examination.

x Oeuvres completes.

β Osteo arthritis 1889.

Muscular Atrophy.

This is usually present to a greater or less extent.

It is a phenomenon which one would naturally expect from the disease consequent to the joint deformities and pain.

But it occurs apart from want of use in the muscles. It is especially liable to attack certain groups of muscles notably the extensors.

Such extensor atrophy is well shown in photos of cases 76 and 73, page 40.

The probable nerve origin of the muscular atrophy of Rheumatoid arthritis is pointed out by Gowers ^x.

He says that atrophy from disease is trifling and slow and affects muscles of diseased limb as a whole. He likewise says that the muscles being affected in their whole length precludes the possibility of arthritic atrophy being due to any local inflammatory change extending from the inflamed joint.

The fact that the reflexes are so often increased also tends to prove the nerve origin of rheumatoid arthritis. In the majority of my cases I found the reflexes increased.

x Diseases of the nervous system, Vol.I, p.498.

Trophic Changes.

In the Skin.

The skin sometimes presents the appearance familiar in cases of nerve injury. It becomes smooth and shiny an appearance which has been called 'Glossy skin'. It is pink or white in colour.

I have found this condition most often in well marked chronic cases.

Sweating.

is sometimes general but it is often local in hands, feet &c. The affected part though sweating, may appear quite cold to the touch.

Pigmentation.

The colour of the skin where pigmentation is present is usually brownish somewhat like freckles, or like tinia versicolor. It most often occurs on forearms and forehead.

It was very well marked in case 66 on forearms and in case 78 on forearms and forehead.

CHAPTER IV.

Differential Diagnosis.

Rheumatoid Arthritis has to be distinguished chiefly from Charcot's Joint Disease, Acute Rheumatism, Chronic Rheumatism and Gout.

1. From Charcot's Joint.

In this there are the nerve symptoms characteristic of the disease especially in-co-ordination of muscular action which is absent in Rheumatoid Arthritis.

In Charcot's also the joint changes come on more suddenly and with less pain than in Rheumatoid Arthritis.

In Charcot's the joints are at first atrophic, but they are not so in Rheumatoid Arthritis. The affected joint in Charcot becomes mobile whereas in Rheumatoid Arthritis the joints lose some or all of their mobility.

The knee reflex is often exaggerated in Rheumatoid Arthritis but absent in Charcot's Joint.

2. From Acute Rheumatism.

The history differs.

Rheumatoid Arthritis tends to start in small joints and to spread to larger ones, whereas Acute Rheumatism starts as a rule

in medium sized joints.

Rheumatoid Arthritis is more chronic and progressive and is more symmetrical than Acute Rheumatism. In Acute Rheumatism the temperature is more raised than in Rheumatoid Arthritis.

The odour of the perspiration in the former disease. *is characteristic*

Valvular disease is much more common in Acute Rheumatism.

In Acute Rheumatism it is the fibrous structures which suffer, but in Rheumatoid Arthritis the cartilages and bones quickly become involved.

3. From Chronic Rheumatism.

This disease does not have a tendency to destroy joint structures or to form bony deposits as does Rheumatoid Arthritis. It shows more liability to cause contractures in tendons than does Rheumatoid Arthritis, and it is as a rule not symmetrical whereas Rheumatoid Arthritis exhibits marked symmetry.

4. From Gout.

The family or personal history is characteristic in Gout.

The latter disease is more common in Men - Rheumatoid in women. Gout generally starts in big toes, Rheumatoid Arthritis in almost any joint. Urate of soda tends to become deposited in Joints in Gout but not in Rheumatoid Arthritis. Such deposits in Gout are apt to break down and ulcerate. This is practically never seen in Rheumatoid Arthritis.

A. (four)



B. (four)



Case. 5.



Another point of great importance is that the changes produced in joints &c. in Gout are as a rule a-symmetrical, but in Rheumatoid Arthritis they are symmetrical.

The ulceration is well shown in photos A and B. In A. (Male) in L. index and right middle finger, and in B. (Female) in right ring finger.

The want of symmetry is shown in the aforesaid ulceration and in the deformities present. It will be noticed especially in Photo A. that no finger corresponds to its fellow of the other hand.

CHAPTER V.

Special Cases.

CASE 5. Aged 63.

I.

Females.

Case 5. Aged 63.

The chief points brought out here are typical deformities in the hands (See photo).

It will be noticed that there is exceedingly well marked radial deflection of terminal phalanges of three of the right fingers and of the left middle finger.

This woman got her living by washing clothes and in the

process of wringing them the right hand was more used than the left. Whether this has anything to do with the fact that changes are more marked in the right than the left hand is perhaps an open question. This difference in degree is well brought out in the photo. It will be seen that in the right hand the knuckles are larger. Each of the four fingers is more deformed and ulnar deflection is better marked. But even this case shows the usual symmetry for the same kind of deformities have well started in left hand.

This woman had had no less than 14 children and four miscarriages. Some of the labours were most difficult, one being a cross-birth.

Arthritic changes in parts other than the hands were but slightly marked.

Case 41. Aged 45.

This is an example of the arthritis clearly following miscarriage, attended by severe haemorrhage. She was an in-patient in the London Hospital for the haemorrhage. She had had in all four miscarriages.

The case also exemplifies tachycardia (110) in one free from valve mischief.

Case. 8.



Case. 9.



Case 40. Aged 45.

also followed two bad miscarriages, attended by severe haemorrhage. Both this case and the last were very anaemic when examined by me.

Case 30. Aged 46.

A point of interest here is that the Arthritis started in left ankle when she was 32, she having received a severe kick in the same region when she was 20. The injury was a serious enough nature for her to be laid up in hospital for it.

Case 8. Aged 61.

Shows extreme flexion and almost complete ankylosis in left knee (see photo). End of the femur shows marked enlargement.

The right knee was slightly flexed and suffered from partial fibrous ankylosis.

Patient's father was said to have had Rheumatic fever and her mother gout.

Case 9. Aged 73.

It was very difficult to bring out in a photograph all the changes which had taken place in hands because the patient was bedridden and the hands were very painful and could not be readily moved. But the photo shows enlargement of knuckles, deformities in thumbs and little fingers, synovial thickening of the wrists

Case 11.



Case 23.



and marked atrophy of the interossei muscles.

Case 11. Aged 67.

This woman's joint troubles, now so well marked, started 10 years ago in the knees soon after sleeping in a damp bed. Her statements are very reliable as she is an intelligent woman and besides was a Hospital nurse for 35 years, having in fact started as a probationer under the famous Miss Nightingale.

There is enormous deformity in the right foot (See photo).

In the knees there was bony enlargement, fibrous ankylosis and slight flexion. There was paralysis agitans of the arms, especially the right rendering it impossible to take a distinct photo of them.

Fibrillary twitchings were marked in the legs.

Case 23. Aged 76.

Close inspection of photo shows Heberden's nodes very well in all the fingers.

There is also seen symmetrical radial deflection of terminal phalanges of little fingers and ulnar deflection especially of little fingers.

Case 6. Aged 47.

This exceedingly well marked case started in the neck when the patient was 30. For over seven years she has been absolutely bedridden.

Case 6.



Case 21.



The photo shows great enlargement of left wrist which is ankylosed. The knuckles too are much enlarged and there are marked deformities in the fingers. The neck, jaw and knees were all almost completely ankylosed.

Case 21. Aged 63.

Eight years ago she was in Hospital for three weeks suffering from injury to right wrist. It was here that the rheumatic trouble started five years after the injury.

The photo of this case shows ulnar deflection especially in little fingers and considerable atrophy of the interossei.

II. MALES.

Case 83. Aged 21.

This case has special interest because of the youthful age of the patient and from the acuteness of the attack.

About 12 months ago this patient enjoyed good health, yet to-day he is, as far as the lower limbs are concerned, completely crippled.

We have here a distinct history of rheumatism on mother's side, and the patient's brother and sister suffer from rheumatoid arthritis.

The disease, as is most common, started in the hands, but

Case. 83.



Case. 76.



now the parts most affected are the knees (see photo). Great structural changes have here taken place in a few months. Both knees are much enlarged and the joints are completely disorganised so that the tibiae are displaced backwards. The internal condyles are prominent as are also the heads of fibulae. The knees are doughy to the touch and exceedingly painful on the slightest movement. There is marked muscular atrophy. The great toes show the usual displacement, abduction and flexion.

Case 76. Aged 62.

An exceptional one in that changes have taken place mostly in metacarpo-phalangeal joints of the thumbs. There is slight ulnar deflection. The case is otherwise typical in being symmetrical.

Case 78. Aged 35.

This was an acute case beginning at the early age of 23 in the jaw. It has now spread to almost every joint. As a sailor he was much exposed to cold and wet which he assigns as a cause of his trouble. When 9 he had Rheumatic fever which would probably predispose his joints to Rheumatoid Arthritis.

The jaws are now so affected that patient cannot separate the teeth at all, so he has to insert food through apertures left by teeth which have been removed.

Case. 78.



Case. 78



Case. 73.



Although structural joint changes have taken place in all the fingers yet it is here that deformities are comparatively little marked.

But the wrists are markedly affected. The photos show well the huge enlargement of each wrist especially the left. These to the touch felt pulpy, much of the enlargement being evidently due to synovial thickening.

Well marked atrophy of forearm extensors is also seen.

There is enlargement of both elbows and fibrous ankylosis.

The knees perhaps show the most marked changes. They are enormously enlarged and show well the typical deformities; namely displacement backward of the tibiae, prominence of internal condyles, displacement outwards of the patellae and prominence of heads of fibulae. All these points are best shown in right knee.

There was in this case well marked pigmentation.

Case 73. Aged 63.

The photo shows ulnar deflection, synovial and bony thickening of the wrists and marked atrophy of the interossei. There can also be seen a fibrous nodule on extensor tendon of right index finger near the knuckles.

Case 81. Aged 43.

Eight years ago this man sprained his right ankle, and this was the first joint to be affected with rheumatism shortly after

Case 81



Case 79.



Case 74



the injury.

The case shows the typical ovoid deformities of the middle phalangeal joints. It is well seen in middle fingers (see photo). There is also seen a well marked gangliform swelling on outer side of left wrist.

Case 79. Aged 76.

Exhibits marked flexion of knees and bony ankylosis of right and fibrous ankylosis of left knee.

The disease started in the right knee five years ago. It is this joint which has given by far the most trouble. In fact until recently this was almost a monarticular case. Even now the hands are practically free as are the joints other than the knees.

Case 74. Aged 56.

This case also began after an injury. The Rheumatoid Arthritis first exhibited itself in the left ankle which had been fractured.

There are ulnar deflection and Heberden's nodes, and radial deflection of several terminal phalanges to be noted in photo of this case.

Case 72. Aged 64.

This man some weeks ago had an acute exacerbation in the right hand, in which the temperature for some days was high-

Case. 72.



er than in the axilla. When the inflammatory swelling had subsided as it had done when this photo was taken the temperature in right hand was lower than in axilla.

When the photo was taken the left hand was recovering from a similar acute outburst. The swelling in left hand is still obvious in photo. ^{See opposite} The permanent deformities left are well shown. It will be observed that there is ulnar deflection especially in the little fingers. Symmetrical ovoid swellings in ring fingers is also obvious.

Case 85. Aged 60.

At first sight judging from the appearance of this man's hands, and from his age, one would put the case down as a chronic one.

But the patient gives an exact and very intelligent history that less than three months before I examined him he felt quite free from rheumatism in any form, and that he had never had any illness in his life with the one exception of Yellow Fever 35 years ago on the Gold Coast.

Patient being a sea-faring man was much exposed to cold and wet to which causes he ascribes his malady. There is no history of gout or rheumatism in patient's family and he has been an exceptionally temperate man.

The case is therefore remarkable for the rapidity with which marked structural changes have taken place in one whose age is

advanced. There were in the hands ulnar deflection, and well marked Heberden's nodes. The wrists and elbows showed bony enlargement. The other joints were practically free.

Case 58. Aged 65.

I examined this case in another Infirmary and he was pointed out to me as being possibly an example of Charcot's Joint disease.

That it was however a case of Rheumatoid Arthritis I am convinced.

The joints which were suspected of being Charcot's were the knees. Their appearance had indeed much in common with that affection.

But even here the joints were ankylosed, not ^{flail} flail-like as they often are in Charcot's disease.

The chief points in favour of Rheumatoid Arthritis were that all the joints were affected except the jaw and the knee, reflexes were much exaggerated. The history was almost impossible to obtain from the patient as he was absolutely deaf. But even this deafness was a point in favour of Rheumatoid Arthritis as possibly it was due to involvement in Rheumatoid change of the ossicles of the ear. In addition the Argyll-Robertson sign was absent.

Case 62. Aged 60.

The chief point of interest here is that in 1884 patient was garrotted and that now his neck is ankylosed as are also his

jaws and knees.

CHAPTER VI.

Conclusion.

In choosing Rheumatoid Arthritis as a subject for my Thesis, I hardly expected, nor I fear, have I succeeded in bringing out many original points.

Since the beginning of Century much has been written on the subject by some of the most able observers. The most notable of these is Charcot, who wrote his Thesis on the subject in 1853. My only apology for presuming to send in a Thesis on the same subject is that in one respect I can claim to have rivalled the Thesis of Charcot. My defence is that my statistics are based upon a larger number of cases than his were. Obviously whatever statistics I have obtained are for numerical reasons more reliable than those obtained upon a smaller number of cases.

But although much has been compiled on Rheumatoid Arthritis there is a very large amount of uncertainty as to the nature and diagnosis of the disease amongst the ordinary rank and file of the profession.

I say this in all humility as until I took up this subject specially I was often in doubt as to whether certain cases were examples of Rheumatism, Rheumatoid Arthritis, or Gout.

That the differentiation of these three diseases is important to all medical men is obvious when we consider how different should be the treatment of each disease, and how frequent is the occurrence of these three maladies.

I will now epitomize a few of the more important points brought out in my Thesis.

HEREDITY.

As to this influence my figures tend to show that heredity does not enter very largely into the causation of Rheumatoid Arthritis.

I included all kinds of Rheumatic joint trouble and gout and yet common as are these diseases I obtained only a percentage of 27 under this heading.

SEX.

The most notable points brought out here are that so many of my Female patients (51 per cent) had had miscarriages, that 50 per cent had had six children and upwards and that 23.6 per cent had had as many as 10 children and upwards.

These figures tend to confirm the general opinion that the genito-urinary system in women often affords a means of entrance for the poison of Rheumatoid Arthritis.

DRINK.

The unusually large proportion of Male cases obtained by me I think may be partly accounted for by the habit of excessive drinking amongst this class of patients.

No less than 40 per cent of the men examined by me acknowledged themselves heavy drinkers - mostly ale.

In this connection it is interesting to note that in 10.7 per cent of my cases (all males) the arthritis started in big toes.

SYMMETRY.

This I have been able to bring out clearly in many of my photos. It is a point of great diagnostic importance especially in some doubtful cases.

ULNAR DEFLECTION.

I have often noticed that this sign is best marked in the little finger where it should be first looked for. This finger is often deflected a considerable distance before the other fingers have appreciably moved. Some of my photos bring this out.

HEBERDEN'S NODES.

These were present in 96 per cent of cases. They are often of great diagnostic assistance.

TACHYCARDIA.

Another striking point brought out in my statistics is that

21 per cent of the cases having healthy heart valves had a pulse rate of 100 and upwards.

In conclusion I should add that my 100 cases represent almost all varieties of the disease. About 70 of them were obtained in the large Infirmary where I am working containing 770 beds and having an admission of upwards of 3,000 per annum. These 70 were made up of a few well marked chronic cases and a larger number of less marked cases, many of which were admitted for some disease other than Rheumatoid Arthritis. I am indebted to the Medical Superintendents of four other Infirmaries for about 30 cases.

TABLE OF 100 CASES OF RHEUMATOID ARTHRITIS—55 FEMALES.

JOINTS AFFECTED.

Number of Case.	Age.	Age when had Rheumatic Fever.	First Joint affected.	Age when "	No. of Children.	Miscarriages.	Labour Easy or Difficult.	Age when had Joint Injury.	Occupation.	Family History.	JOINTS AFFECTED.											Pulse.	Heart.	Anaemia.	Cause assigned by Patient.	REMARKS.
											Hands and Wrists.	Elbows.	Shoulders.	Neck.	Jaws.	Feet and Ankles.	Knees.	Hips.	Ulnar Deflection.	Heberden's Nodes.						
1	73	48	K 58	8	1	E			Glass Smoother	M. rheum.	×	×	×						Slight	Yes	80	Ao & M	Marked	...		
2	85	?	K 45	12	2	E			Housemaid	No rheum.	×	×				×	×		Marked	Yes	88	Normal	...	...
3	65		W 61	4	1	E		W 61	Washing	No rheum.	×	×				×	×		Marked	Yes	100	Mitral	Marked	...		Left Colles' fracture, 4 years ago
4	43	40	F 41	5	1	E			Housework	F. rh. fever	×	×	×			×	×		Yes	Marked	120	Normal	Yes	...		
5	63		H 52	14	4	D			Washing	No rheum.	×	×	×			×	×		Yes	Marked	76	Normal	...	Often wet		
6	47	15	N 30	0	0				Housework	F. lumbago	×	×	×			×	×		Marked	Slight	90	Normal	...	...
7	70		K 69	6	4	D			Washing	No rheum.	×	×	×			×	×		Yes	Yes	120	Normal	Slight	...		Ganglion left wrist
8	61		W 43	13	3	D			Not any	F. rh. Fever	×	×	×			×	×		No	Yes	72	Normal	Slight	...		
9	73		H 61	10	0	D			Housework	G. parents rh.	×	×	×			×	×		Yes	Yes	96	Normal	...	...
10	62		K 58	5	0	D			Washing	?									Slight	Yes	80	Normal	...	...
11	67		K 57	0	2				Hospl. Nurse	No rheum.	×	×	×			×	×		Slight	Yes	96	Normal	Yes	Damp Bed		Great deformity right foot
12	69		H 63	5	1	E			Housewife	M. rheum.	×	×				×	×		Slight	Yes	90	Mitral	..	...		Died of heart disease
13	80		?	0	0				Needle	?	×								No	Yes	80	Normal	...	...
14	53		? 50	10	0	E			Tailoress	No rheum.	×	×	×			×	×		No	Yes	88	Normal	...	Damp room		
15	70		H ?	6	1	E			Housework	?	×								Yes	Yes	96	Irregular	...	...
16	72		H 56	7	0	E			Tailoress	No rheum.	×								No	Yes	88	Normal	...	...
17	65		H 45	7	0	E			Washing	No rheum.	×					×	×		Slight	Yes	76	Normal	...	...		Lipomata on forearms
18	72		?	6	0	D			Housewife	?	×	×				×	×		Slight	Yes	88	Ao & M	Yes	...		
19	66		E 62	13	0	E		E 60	Needle	No rheum.	×	×							Slight	Yes	?	Ao & M	Slight	...		Injury to r. elbow in which rheum. started
20	75	10	K ?	4	1	D			Housemaid	No rheum.	×					×	×		No	Yes	72	Mitral	Yes	...		
21	63		H 60	10	3	D		H 55	Washing	No rheum.	×	×							Yes	Yes	84	Normal	Slight	Fall on hand		Three bad miscarriages
22	76		K 26				Single		Cook	?	×								Slight	Yes	70	Mitral	Yes	...		
23	78		H 48	8	1	E			Pressing Clothes	?	×								Slight	Yes	80	Normal	...	...
24	64	27	F 62	13	5	D			Needle	No rheum.	×	×	×			×	×		No	Yes	76	Normal	...	...		Operation for uterine tumour when 29
25	69	30	K 65	13	1	D			Not any	No rheum.	×	×				×	×		No	Yes	80	Normal	...	...		Lipomata near knees
26	64		?	10	2	D		Hip 63	Needle	No rheum.	×								No	Yes	96	Normal	Slight	...		Followed injury to hip
27	68	20	F 21	0	2				Brushmaker	G. F. & G. M. rh. Gt	×								No	Yes	80	Normal	...	Family history		
28	56		?	15	3	E			Housework	No rheum.	×								No	Yes	80	Normal	Slight	...		
29	53		?	4	3	D			Tailoress	F. rheum.	×					×	×		No	Yes	100	Normal	Yes	...		
30	48	6	F 32	3	1	D		A 20	Barmaid	F. rh. gout	×	×							No	Yes	98	Normal	Yes	Worry		Ankle kicked—abscess formed
31	53	23	H 27	5	1	D			Servant	No rheum.	×	×	×			×	×		Marked	Slight	80	Normal	Slight	Damp bed		
32	63		S 61	9	0	E			Scrubber	?	×	×	×			×	×		No	Slight	88	Mitral	...	Wet		
33	70		?	9	0	E			Pickling	?	×								Slight	Yes	66	Mitral	Yes	...		
34	70		?	11	0	E			Hawker	?	×	×	×						No	Marked	110	Normal	Slight	...		
35	76		H 56	0	0				Housework	M. rheum.	×	×	×			×	×		Slight	Yes	84	Normal	Yes	...		Garcinoma uteri
36	56		H 54	9	2	D			M. Nurse	?	×	×	×			×	×		Yes	No	100	Normal	Yes	...		Osteophytes in knees
37	74		K 72	10	1	E			Greengrocer	M. rheum.	×					×	×		No	Yes	92	Normal	Slight	...		Always had good health till present
38	83		?	8	2	E			Housework	?	×								Slight	Yes	80	Normal	Slight	...		Do. do. do. [illness
39	74		H 71	10	0	D		H 52	Housewife		×								Yes	Marked	100	Normal	No	...		Do. do. do.
40	45		F 35	4	2	D			Housework	G. F. rh. gout	×	×	×			×	×		Yes	Yes	80	Normal	Marked	Hereditary		2 bad miscarriages with haemorrhage
41	45		H 45	7	4	D			Machine	F. rheum.	×	×	×			×	×		Yes	Yes	110	Normal	Marked	...		In hospital 4 years ago for miscarriage
42	62		H 47	0	0				Tailoress	Parents well	×	×	×			×	×		Yes	Yes	82	Normal	Slight	...		No illness till present one
43	60		K 58	0	0				Needle	?	×	×	×			×	×		Marked	V. Slight	100	Feeble	Slight	...		
44	59	53	H 49	9	3	D			Housework	No rheum.	×	×	×			×	×		Marked	V. Slight	104	Normal	Slight	Bad Confinement		Had 3 bad confinements
45	73		?	0	0			H 56	Housework	?	×								No	Marked	80	Feeble	...	...
46	48	28	?	6	1	E			Housework	No rheum.	×	×	×			×	×		Slight	Yes	120	Mitral	...	...		Bad miscarriage 10 years ago
47	51		W 48				Single		Servant	F. rh. gout	×	×	×			×	×		Yes	Yes	90	Normal	Slight	Influenza		
48	60		E 60	3	0	D			Ironer	No rheum.	×	×	×			×	×		No	Yes	90	Normal	Yes	Damp room		Free from rheum. 8 months ago
49	58		A 50	0	0				Cook	No rheum.	×	×	×						Yes	Slight	100	Normal	Yes	Damp bed		
50	65		H 35	0	0				Servant	?	×	×	×						Slight	Slight	80	Normal	...	...		Marked muscular atrophy
51	76		H 40	0	0				Washing	No rheum.	×	×	×			×	×		Yes	Yes	88	Normal	...	...
52	54		K 53	0	0				Servant	No rheum.	×	×	×			×	×		No	Yes	104	Normal	...	...
53	40		H 38	2	0	E		H 38	Charing	No rheum.	×	×	×			×	×		Marked	Yes	84	Normal	...	Sprain of hand		No illness till now
54	63		W 52	1	0	E			Cook	No rheum.	×	×	×			×	×		Yes	Yes	100	Normal	...	...
55	69		E 57	1	0	D			Washing	No rheum.	×	×	×			×	×		Marked	Slight	90	Mitral	...	...

TABLE OF 100 CASES OF RHEUMATOID ARTHRITIS—45 MALES.

JOINTS AFFECTED.

Number of Case.	Age.	Age when had Rheumatic Fever.	First Joint affected.	Age when "	Age when had Joint Injury.	Occupation.	Family History.	Hands and Wrists.	Elbows.	Shoulders.	Neck.	Jaws.	Feet and Ankles.	Knees.	Hips.	Ulnar Deflection.	Heberden's Nodes.	Pulse.	Heart.	Anaemia.	Cause assigned by Patient.	Amount of Malt Liquors taken by Patient.	REMARKS.
56	49		Toe 38			Ship's Fireman	No rheum.	×			×			×		Marked	Yes	80	Normal	...	Heat and cold	Very great	
57	67		A 37			Clerk	No rheum.	×	×	×			×	×		Marked	Yes	68	Normal	Yes	Business worry	Moderate	
58	65	?	? ?			On Railway	?	×	×	×	×		×	×	×	Yes	No	100	Normal	...	...	Moderate	Reflexes much increased
59	77		Toe 43			Carman	2 Sisters rheum.	×	×				×	×	×	Yes	Yes	100	Normal	...	...	Moderate	
60	61	?	H 34			Builder	Male's Gout	×	×	×	×		×	×	×	Yes	Yes	90	Normal	Slight	...	Moderate	Distinct history of Gout on Male side
61	79		W 70			Carman	?	×								No	Slight	68	Normal	Slight	...	Moderate	
62	60	38	N 44		N 44	Tailor	No rheum.				×	×		×	×	No	V. slight	102	Normal	...	Injury to Neck	Moderate	Garroted when 44, neck & jaw ankylosed
63	57		K 32			Carpenter	F. &c., rheum.	×	×				×	×		Yes	Yes	80	Normal	...	Heredity	Large	Father and two brothers died of rheum.
64	87		F 27			Ship Steward	No rheum.	×	×				×	×	×	Yes	Yes	90	Normal	Slight	...	Port drinker	
65	43	12	Toe 36			Printer	No rheum.	×	×	×	×		×	×	×	No	Slight	110	Normal	...	...	Large	Neck ankylosed
66	74		Toe 40			Bootmaker	M Gout	×	×	×	×		×	×	×	Marked	Yes	100	Normal	Slight	...	Moderate	Marked pigmentation, osteophytes r. elbow
67	34		Toes 27			Coal Porter	F. rheum.	×	×	×		×	×	×	×	Marked	Slight	70	Normal	...	Wet	Moderate	Jaw ankylosed, forced open by operation
68	62		Toes 51			House Broker	No rheum.	×	×	×	×	×	×	×	×	Slight	Yes	90	Feeble	...	Good living	Considerable	Neck and jaw ankylosed. [twice
69	45		F ?			Stevedore	F. rh. gout	×						×		No	Yes	70	Normal	...	Working in wet	Moderate	Fluid in right knee
70	28	23	F 24			Labourer	?	×	×	×	×		×	×	×	No	Slight	80	Normal	...	Cold when hot	Moderate	Neck partly ankylosed
71	72		H ?			Clerk	?	×								Yes	Yes	90	Mitral	...	...	Moderate	
72	64		F 60			Timber Porter	No rheum.	×			×		×	×		No	Yes	110	Normal	...	Often wet	Moderate	Sweating of hands and feet
73	63		A 51		A 33	Stevedore	No rheum.	×	×	×			×	×	×	Slight	Yes	112	Normal	Marked	Wet	Large	
74	56		A 46		A 46	Rigger	No rheum.	×	×	×			×	×		Yes	Yes	100	Mitral	...	?	Moderate	Fibrous nodule behind r. knee
75	56		K 43			Coal Boats	No rheum.	×	×	×			×	×		Slight	Yes	60	Normal	...	Wet	Large	
76	62		? ?			Boat Yard	?	×						×		Yes	No	88	Normal	...	?	Considerable	In thumbs mostly
77	72		S 42			Ropeworker	No rheum.	×		×			×	×	×	No	Yes	68	Normal	...	Heat and cold	Very moderate	
78	35	9	J 23			Sailor	No rheum.	×	×	×	×	×	×	×		Slight	Slight	120	Normal	Yes	Cold and wet	Very moderate	Ankylosis of jaws. Pigmentation
79	76	25	K 71			Coal Porter	No rheum.	×					×	×	×	Slight	Slight	72	Normal	Yes	Cold and wet	Considerable	Ankylosis both knees, hands almost free
80	52		H 50			Labourer	F. rheum.	×					×	×		Slight	Yes	104	Normal	...	Wet	Large	
81	43		A 35		A 35	Bargeman	M. rheum.	×	×				×	×		No	Slight	60	Normal	...	Wet night & day	Moderate	Started in ankle after sprain
82	74		H 54			Shipwright	No rheum.	×	×	×			×	×	×	Yes	Yes	84	Normal	Slight	Very often wet	Very moderate	
83	21		H 20			Ironm'ger's Asst.	M.B. & S. rheum.	×	×			×	×	×		Slight	Slight	92	Normal	Yes	Getting wet	Moderate	
84	62	42	H 32			Ship Caulker	F. gout M. rh.	×					×	×	×	Yes	Yes	84	Normal	...	Often wet	Moderate	
85	60		F 60			Sailor	No rh. or gout	×	×				×	×		Yes	Marked	88	Normal	...	Cold and wet	Very temperate	Marked deformities in few weeks
86	64	39	F & K 48			Lighterman	No rheum.	×		×			×	×	×	No	Yes	76	Normal	...	Wet	Large	Universal eczema two years ago
87	61		K 56			Hawker	F. gout & rheum.	×					×	×		No	Yes	76	Normal	...	Cold and wet	Large	Little fluid left knee
88	51	17	H 20			Wood Chopper	M. rheum.	×					×	×		Slight	Yes	84	Normal	...	?	Heavy	
89	65		H 55			Interpreter	No rheum.	×	×			×	×	×		No	Yes	98	Normal	Slight	Port drinking	Much port & ale	
90	73		S 73			Seaman	?	×		×			×	×		No	Yes	68	Normal	...	?	Moderate	
91	63		K 62			Lighterman	No rheum.	×					×	×		No	Slight	76	Normal	...	?	Heavy	Ankylosis right knee. Hands practically
92	40		Toe 26			Lead Worker	M. rheum.	×	×	×			×	×		No	Slight	80	Normal	Yes	?	Moderate	[free
93	54		F 47			Stevedore	?	×					×	×		No	Yes	96	Normal	...	Often wet	Heavy	
94	61	32	? ?			Stevedore	No rheum.	×	×				×	×		No	No	84	Normal	..	Wound of Eye	Very great	
95	83		? ?			Labourer	?	×					×	×		Marked	Marked	80	Normal	...	?	Moderate	
96	52		Toe 42			Carman	No rheum.	×	×				×	×		Slight	Marked	88	Normal	...	Getting wet	Moderate	
97	70		? ?			Groom	?	×					×	×		Yes	Yes	80	Normal	...	?	Moderate	[which was injured
98	53		F 39		H 33	C. Traveller	No rheum.	×	×				×	×		Yes	Yes	66	Normal	Slight	Wet	Moderate	Ulnar deflection marked in right hand
99	54		Toes 23			Stevedore	M. rh. gout	×	×				×	×		Marked	Yes	86	Mitral	Slight	Heredity	Moderate	Bright's disease
100	66		H 65			Cooper	?	×		×				×		Yes	Slight	66	Normal	...	?	Large	

TOTAL PER CENT. } 97 59 46 18 14 63 80 31