



Staff Meeting Bulletin
Hospitals of the » » »
University of Minnesota

Rheumatoid Disease

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William A. O'Brien, M.D.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL
 CALENDAR OF EVENTS
 April 3 - April 8

Visitors Welcome

Monday, April 3

- 9:00 - 10:00 Roentgenology-Medicine Conference; L. G. Rigler, C. J. Watson and Staff, Todd Amphitheater, U. H.
- 9:00 - 11:00 Obstetrics and Gynecology Conference; J. L. McKelvey and Staff, Interns Quarters, U. H.
- 12:30 - 1:30 Pediatrics Seminar; Adoption; E. K. Clarke, W-205 U. H.
- 12:30 - 1:30 Pathology Seminar; Inherited Susceptibility to carcinoma of the Breast in Mice; J. J. Bittner, 104 I. A.
- 4:00 - Preventive Medicine and Public Health Seminar; Some New Potential Resources against Communicable Diseases; Haven Emerson, 6th Floor, H. S. Lounge
- 7:30 - Cancer Biology Seminar; J. J. Bittner, 111 M. H.
- 8:00 - Scientific Session of Hennepin County Medical Association; "Brain Surgery"; Lt. Charles H. Shelden; Motion Picture entitled "The Lucite Calvarium"; Society Auditorium, 20th Floor, Med. Arts Bldg.

Tuesday, April 4

- 8:00 - 9:00 Surgery Journal Club; O. H. Wangensteen and Staff, Main 515, U. H.
- 9:00 - 10:00 Roentgenology-Pediatrics Conference; L. G. Rigler, I. McQuarrie and Staff, Eustis Amphitheater, U. H.
- 11:00 - 12:00 Urology Conference; C. D. Creevy and Staff, Main 515, U. H.
- 12:30 - 1:30 Pathology Conference; Autopsies. Pathology Staff, 104 I. A.
- 12:30 - 1:30 Physiology-Pharmacology Seminar; Relationship of Anoxia to Body Temperature; Frederic Kottke, 214 M. H.
- 4:30 - 5:30 Obstetrics and Gynecology Conference; J. L. McKelvey and Staff, Station 54, U. H.
- 4:00 - 5:00 Pediatric Grand Rounds; I. McQuarrie and Staff, W-205 U. H.
- 5:00 - 6:00 Roentgen Diagnosis Conference; A. T. Stenstrom; M-515 U. H.

Wednesday, April 5

- 9:00 - 11:00 Neuropsychiatry Seminar; J. C. McKinley and Staff, Station 60, Lounge, U. H.
- 10:30 - 12:00 Otolaryngology Case Studies; Out Patient Ear, Nose and Throat Department; L. R. Boies and Staff.

- 11:00 - 12:00 Pathology-Medicine-Surgery Conference; Ruptured Aortic Cusp; E. T. Bell, C. J. Watson, O. H. Wangensteen and Staff, Todd Amphitheater, UH.
- 12:30 - 1:30 Pharmacology Seminar; Toxicity and Detoxification of the Arsphenamine; H. N. Wright; 105 M. H.
- 4:30 - 5:30 Neurophysiology Seminar; Physiological Variations in the Activity of Cholinesterase; Erving Rusoff, 113 M. S.

Thursday, April 6

- 9:00 - 10:00 Medicine Case Presentation; C. J. Watson and Staff, Todd Amphitheater U. H.
- 10:00 - 12:00 Medicine Rounds; C. J. Watson and Staff, East 214 U.H.
- 12:30 - 1:30 Physiology Chemistry Seminar; Oral and Dental Biochemistry; W. D. Armstrong, 116 M.H.
- 4:30 - 5:30 Bacteriology Seminar; Streptothricin; C. Stuhlberg, 113 M. S.
- 5:00 - 6:00 Roentgenology Seminar; Review of Autopsy Findings in Pernicious Anemia and Stomach Tumors; H. S. Kaplan, M-515 U. H.

Friday, April 7

- 9:00 - 10:00 Medicine Grand Rounds; C. J. Watson and Staff; Todd Amphitheater, U.I
- 8:30 - 10:00 Pediatrics Grand Rounds; I. McQuarrie and Staff
- 10:00 - 12:00 Medicine Ward Rounds; C. J. Watson and Staff; East 214 U. H.
- 1:30 - 2:30 Medicine Case Presentation; C. J. Watson and Staff; Eustis Amphitheater.
- 1:00 - 2:30 Dermatology and Syphilology; Presentation of selected cases of the week; Henry E. Michelson and Staff; W-306 U. H.
- 1:30 - 3:00 Roentgenology-Neurosurgery Conference; H. O. Peterson, W. T. Peyton and Staff, Todd Amphitheater, U. H.

Saturday, April 8

- 9:00 - 10:00 Medicine Case Presentation, C. J. Watson and Staff, Main 515 U. H.
- 9:15 - 11:30 Surgery-Roentgenology Conference; O. H. Wangensteen, L. G. Rigler, and Staff, Todd Amphitheater, U. H.
- 10:00 - 12:00 Medicine Ward Rounds; C. J. Watson and Staff, E-214 U. H.
- 11:30 - 12:30 Anatomy Seminar; The Hematopoietic Activity of the Reticulo-Endothelium (continued); Hal Downey; Primary Splenic Neutropenia of Wiseman-Doan; R. H. Reiff, 226 I. A.

II. CLINICAL STUDIES IN RHEUMATOID DISEASE (Subcutaneous Nodules-Rheumatic Heart Involvement)

Macnider Wetherby

In any consideration of rheumatoid disease we are confronted with two general difficulties. The first is, what etiological factors are the cause of rheumatoid disease? The second is, what is the clinical relationship between the many and varied rheumatoid manifestations? No one can at this time supply an adequate answer to these two questions. There has been much investigative work covering many phases of the rheumatoid problem. There is evidence that streptococci are of etiological significance in rheumatoid disease, however, this is not conclusive and there is much to explain as to the mechanism of the infectious process. There is also much to explain in regards to the varying tissue response of different persons.

One problem of interest is the question of an etiological relationship between clinical rheumatic fever and clinical rheumatoid arthritis. Classical descriptions of these conditions make the differentiation seem easy. Clinically however, there are so many patients with atypical and varying rheumatoid manifestations that the differentiation and the placing of all patients in two such set divisions, is exceedingly difficult.

The age factor is probably of great importance in determining the clinical response to rheumatoid disease. In young children many clinical rheumatoid experiences will fit the description of acute rheumatic fever---febrile transitory acute polyarticular involvement with some cardiac involvement in most cases and with residual valvular heart disease in a high percentage of cases. Infrequently however, children will show chronic persistent joint involvement with little or no fever, such cases frequently being termed Still's disease and not unlike the clinical manifestations seen more often in adults between 25 and 50 years of age. These children rarely show valvular heart disease but do occasionally develop pericarditis. There are

other rheumatoid experiences in children that are difficult to classify and that are often termed as "growing pains". These may be in a variety of clinical forms and may or may not be rheumatoid disease in all cases. Many do have low grade transitory joint as well as muscle pains, and at times have some elevation of body temperature. Some of these may also have valvular heart disease although less frequently than those who have had more severe acute transitory febrile polyarthrititis. Such clinical manifestations not infrequently may persist for months or years after an acute rheumatic episode or interspersed between recurring acute episodes or may often occur without any association with a definite acute febrile polyarticular attack. I have seen a number of young adults who have had transitory polyarticular joint pains with little or no objective joint involvement, since childhood and over periods of 10, 15 or 20 years. The rheumatoid experiences of individuals between 15 and 30 years of age are a matter of special interest. Clinical rheumatic fever is seen in some instances although less often complicated by clinical valvular heart disease than in children. Clinical chronic rheumatoid arthritis is also seen although much less frequently than in adults from 30 to 50 years of age. It is in the young adult group that we so frequently see rheumatoid disease difficult to classify as either rheumatic fever or chronic rheumatoid arthritis. In many instances the clinical picture is confused and the diagnosis made is often arbitrary and will vary with different physicians examining the same patient. It is in this age group that we not infrequently may see an acute febrile polyarticular onset with or without heart valve involvement, that continues on and results in chronic rheumatoid joint disease. In a series of 1000 patients with chronic rheumatoid arthritis, (at the University of Minnesota Hospitals, out-patient clinic) we have had a history of an acute febrile polyarticular clinical onset in 52 cases (52 per cent). Many of these patients were young adults at the time of onset. The most common clinical manifestations

of rheumatoid disease in young adults are usually not of serious consequence. Many have transitory or more persistent joint pains that are not of a serious nature and show few or no objective joint changes. These usually clear up clinically within a few weeks or months but, occasionally persist for years, and at times do later develop findings characteristic of clinical rheumatoid arthritis.

In the age group from 30-50 years, we most often see the onset of chronic rheumatoid disease which may be of a serious crippling nature. This is commonly termed Rheumatoid arthritis. In a series of 1000 patients with clinical rheumatoid arthritis, seen in this clinic, we found the most frequent clinical onset to be between 40 and 49 years of age. There are many clinical variations and differences in the severity and in the location and character of tissue involvement. The onset is most often insidious, but may be acute and occasionally with acute febrile involvement. The process may be of little clinical significance in many cases and of very serious consequences in others. It is difficult to classify or separate such cases; and individuals with very minimal involvement may at a later time either suddenly or gradually develop a very serious crippling disease process. In the majority however, the clinical condition may largely or completely subside. The exact prognosis is usually uncertain.

In persons over 50, 60 or 70 years of age, we may see clinical involvement similar to that seen in the earlier decades of life, however, there is a general tendency towards less frequent severe crippling involvement and towards a more chronic low grade condition. In older patients we have the added problem of joint changes probably due at least in part, to aging and persistent trauma. Hypertrophic X-ray or pathological changes can be seen in the vertebrae or in the bones adjacent to the knee joints in nearly everyone over 50 years of age. There is evidence that similar changes may result in association with joint involvement probably of an infectious type. There is much written concerning the differentiation of clinical rheumatoid arthritis from hyper-

trophic or rheumatoid arthritis. The exact line of distinction is not clear to me in patients with clinical joint disease. There are a wide variety of clinical rheumatoid or probable rheumatoid manifestations especially involving joints, bursae, periticular tissues and fibrous tissues. It is difficult to classify many of these perhaps the majority of them. There are few persons living in the temperate zone who do not have some symptoms suggestive of rheumatoid involvement at some time of life. Probably only a small percentage are of such significance that they are termed rheumatic fever or rheumatoid arthritis. I am inclined to believe that these less serious clinical experiences do have some common etiological relationship with more serious types of involvement.

Subcutaneous nodules are one of the significant lesions associated with rheumatoid disease. Hillier in 1868, Meynet in 1875, Barlow and Warner in 1881 were some of the first to describe them in patients with rheumatic fever. Hawthorne in 1900 described subcutaneous nodules in six patients and considered rheumatic fever and rheumatoid arthritis different manifestations of the same process. In more recent years there have been a number of reports of their frequent presence in patients with rheumatoid arthritis.

A series of 841 patients with significant chronic rheumatoid disease were seen in the out-patient clinic of the University of Minnesota Hospital and examined carefully for subcutaneous nodules. In this group nodules were found in 225 patients, (26.6 per cent). The patients were nearly all ambulant and could be termed as having clinical rheumatoid arthritis. Patients with minimal and transitory rheumatoid symptoms were not considered in this series although nodules are occasionally seen in such patients. The age of clinical onset was considered by decades and it was found that patients acquiring clinical rheumatoid disease at all decades of life were likely to have subcutaneous nodules in about the same percentage of

cases. The single exception to this was a small group of 9 patients acquiring the clinical condition prior to 9 years of age. This was too small a number to be of statistical significance.

Symptoms: Patients are frequently unaware of the presence of nodules which are usually painless. At times there is some pain associated, especially if they be located at some point of frequent trauma such as the plantar surface of the foot. One patient with bilateral nodules over the ischial tuberosities complained of pain on sitting down. One patient with a large nodule on the dorsum of the hand complained of difficulty in extending the fingers.

Duration: The duration of nodules in chronic rheumatoid disease varies considerably. They may occasionally disappear after a few weeks or a few months but are often present for years. Some patients have reported the known presence of a nodule as long as twenty years. It has been my impression that nodules over the skull or fingers are likely to be of shorter duration than those over the elbows or over the upper ulna. In general, nodules occurring in young adults are more likely to be of shorter duration than those occurring in older patients. Nodules in children with clinical rheumatic fever usually persist only a few weeks or at times for a few months and only rarely longer.

Distribution and Characteristics:

Subcutaneous nodules in patients with chronic rheumatoid disease are found more often on the extremities than elsewhere and far more often on the upper, than the lower extremities. In over half of the cases, nodules were found over the elbows or overlying the ulna sometimes in chains. At times these nodules are found in the olecranon bursa, and in some instances may occur as multiple nodular masses in the olecranon bursa which may contain a serous exudate. The largest nodules are often found below the elbow and in a few cases may be 3-4 cm. in diameter. The larger ones usually are compound nodular masses. Nodules on the upper extremity are commonly found over the fingers and hands and may be near joints or frequently attached

to tendons. I have seen such nodules overlying the flexor tendons of the palm of the hand and the fingers in patients developing a so called Dupuy-tien's contraction. In the lower extremity the most frequent locations are about the knee or over the upper tibia, attached to the Achille's tendon or about the feet. In one patient I have seen large nodules (3 cm. in diameter) over both femoral trochanteric processes and in another bilateral nodules attached to the ischial tuberosities. They are occasionally found over the sacrum and other vertebrae; and at times over the skull, most frequently the occipital region. A bilateral symmetrical location of nodules is quite common. Nodules may vary in size from small discrete masses of a few millimeters in diameter to large masses 3-4 cm. in diameter. Occasional patients with chronic rheumatoid disease will have extensive nodules; as many as 40 or 50 single and compound nodules occasionally being seen. One patient gave a history of having had seven pounds of nodules excised and had large numbers recurring four years later. These nodules seen in patients with rheumatic fever often have a wider distribution and are relatively more often found over the lower extremities and the occiput; although they are also reported as being present more often about the elbows than in any other location (Findlay).

Clinical Differential Diagnosis:

There is usually little difficulty in accurately identifying the rheumatoid subcutaneous nodule; however there are a few conditions which may be confused. The juxta-articular node of syphilis cannot be differentiated by gross examination although it is infrequently seen. Other lesions occasionally confused are foreign body nodules, lipomata, tumors attached to tendons or tendon sheaths, and gouty tophi.

The Microscopic Structure of Nodules Hirschsprung in 1881 gave the first microscopic description of nodules found in patients having acute rheumatic fever. Since then there have been

numerous reports in the literature describing these and also nodules from patients with chronic rheumatoid disease. Clawson has summarized his view of the pathology of nodules as follows: "The structure of the nodules from chronic arthritis does not differ in any respect except degree, from that described in the nodules in the subcutaneous tissues, joints, tendons, galea aponeurotica, diaphragm, tongue, tonsils, arteries, heart valves, and auricles and ventricles of the heart in acute rheumatic fever. It is the structure so commonly found in acute rheumatic fever, or in nodules produced experimentally in animals by injecting streptococci. The cellular reaction in the three conditions seems probably to be due to the same cause. The fact that subcutaneous nodules structurally similar to subcutaneous nodules in acute rheumatic fever, are found in so high a percentage of cases of chronic arthritis, strongly suggests a common etiology, at least in most cases."

The Bacteriology of Subcutaneous Nodules.

There are a few isolated reports of occasional positive cultures of streptococci from nodules from patients with acute rheumatic fever. Billings, Coleman and Hibbs reported finding streptococcus viridans in a "fibroid nodule" from a patient with chronic arthritis. Wick, and Dawson and Boots reported negative cultures of nodules from patients with chronic arthritis. Clawson and Wetherby reported finding streptococci in twelve of seventeen nodules (70.6 per cent), from patients with chronic arthritis. Most strains were isolated as diplococci, all were gram-positive and produced green discoloration faintly when grown on a sheep blood agar plate for twenty-four hours at 37°C.

The Frequency and Significance of Rheumatic Heart Disease in Chronic Arthritis

One of the most significant features of clinical rheumatic fever in children is the high incidence of permanent heart valve damage. This incidence is somewhat lower in older children and considerably lower in adults who develop acute transitory febrile polyarthritis. Adults developing chronic rheumatoid disease do not seem to develop clinical rheumatic heart disease

in a high percentage of cases. Assuming similar infectious agents to be present at all ages, it seems not unlikely that this may represent a variation in tissue response with age. Gross has presented the interesting evidence that the musculature and blood vessels of the heart valves undergo regressive changes in most persons during childhood, and that such vessels are usually absent in adults.

There have been previous reports of the clinical incidence of rheumatic heart involvement in patients with chronic arthritis such as those of Barjon, Blanc and Guyemot, McCrae, Coates, Monroe and Walcott, Kahlmeter and others. The percentages found with rheumatic heart involvement have varied and in some of these studies there is doubt as to the rheumatic nature of the heart involvement in all cases. Boas and Rivkin studied a group of 80 patients with severe chronic arthritis seen in an orthopedic hospital ward. They reported "infectious valvulitis" in 14 patients (17.5 per cent). Grzimek reported a study of the heart valves in 520 autopsies. His criteria for arthritis was the finding of exostoses of the knee joints (which may be open to criticism). He reported that of 91 such arthritic individuals, 39 (42.8 per cent) had healed or recurrent rheumatic heart valve disease. In the control series of 429 without knee joint exostoses, he found 77 (17.9 per cent) with such healed or recurrent rheumatic heart valve disease. The diagnosis was based on gross inspection alone. Baggenstoss and Rosenberg reported necropsy study in a series of 25 cases of chronic infections (rheumatoid) arthritis. Cardiac lesions identical with those of rheumatic fever were observed in 14 (56 per cent). It is of interest that this was a selected group of cases with severe extensive rheumatoid disease. Fingerman and Andrus reported autopsy findings in a series 61 cases of rheumatoid arthritis from the autopsy files of the University of Minnesota Pathology Department. In this series they found 19 (31 per cent), to have rheumatic heart lesions. These cases also were

a selected group who had had serious extensive polyarticular involvement.

Our experience at the University of Minnesota out-patient clinic has consisted of the examination of a series of 1000 patients (348 males, 652 females) with clinical rheumatoid arthritis, for evidence of rheumatic heart disease, and a comparative study of a control series of 1000 patients of similar ages without significant clinical rheumatoid disease. The patients in this group were 16 years of age and over. There were many varied patterns of rheumatoid disease, however most of them were not seriously crippled by the process. In 84 per cent of cases they had had clinical rheumatoid disease for more than one year and in 50 per cent of cases for more than five years. No one was considered as having rheumatic heart disease unless there was definite evidence for it. Patients with definite and questionable lesions were all referred to the cardiac clinic for an orthodiagram, electrocardiogram and review of their physical findings. From this study it was found that there were 21 patients (2.1 per cent) with definite clinical rheumatic heart disease in 1000 patients with chronic rheumatoid arthritis. The clinical diagnoses were as follows: mitral valve involvement alone, 11 cases, aortic valve involvement alone 5 cases, combined aortic and mitral involvement 3 cases, pericarditis 2 cases. In the control series there were 8 patients with rheumatic heart disease (.8 per cent). This is not a striking difference but does seem to have statistical significance. It seems probable that some other patients with systolic murmurs alone and with indefinite findings may also have had minimal rheumatic heart disease; but it does present a fair comparative study. A clinical study of ambulant patients can in no way be compared with autopsy studies that represent the final full effect of a disease process. It is also significant that autopsy studies such as those of Baggenstoss and Rosenberg, and Fingerhahn and Andrus; represent the selection of small groups of cases with very serious extensive disease processes. The experience of Boas and Rivkin in which they report an incidence of rheumatic heart disease in 17.5 per cent is also on a select group of seriously involved hospitalized patients. Undoubtedly,

the selection of the material will influence the percentage of rheumatic heart involvement found in patients with clinical rheumatoid arthritis. We could find no significantly higher incidence of clinical rheumatic heart disease in those rheumatoid arthritic patients who had subcutaneous nodules than in those without. It is of interest that in the 1000 patients with chronic rheumatoid disease there was a history of an acute febrile polyarticular onset in fifty-two cases (5.2 per cent); and these were chiefly in younger patients. Ten of the twenty-one patients with rheumatic heart involvement had had such an acute clinical onset. In all of these patients the joint involvement continued on in a chronic persistent form. The incidence of rheumatic heart involvement in this group of cases is 19.2 per cent. There would be no significant difference in the arthritic and control groups if these cases were excluded. This is in accord with the view of Strumpell, Pribram, and Kast. Among eleven chronic arthritic patients, with clinical joint involvement of a more insidious nature, and with clinical rheumatic heart involvement, there was a previous history of rheumatic fever in five cases and no such history in six cases.

A record was also made of the incidence of historical rheumatic fever in the two groups. This was interpreted as polyarticular febrile, transitory, involvement. It was of interest that a history suggestive of previous rheumatic fever was obtained nearly twice as often in the group with rheumatoid arthritis as compared with the control group. A previous history of scarlet fever was about the same in both groups. There are difficulties in memory and errors in interpretations that make it difficult to be sure of the significance of such histories.

Summary

1) There are many varying clinical manifestations of rheumatoid disease. Many of these fit no set classification. Two common clinical forms are rheumatic fever and rheumatoid arthritis. Within

such groups there are many variations. It is not unlikely that age is one of the major factors determining the clinical response to similar etiological agents (probably streptococci). In the age group from 15-30 years there is much overlapping of clinical rheumatic fever and clinical rheumatoid arthritis, and there are a great number of rheumatoid episodes difficult to classify.

2) Subcutaneous rheumatic nodules are found frequently in rheumatic fever and rheumatoid arthritis. They were present in 225 of a series of 841 ambulant patients with clinical rheumatoid arthritis, (26.6 per cent). These nodules are structurally similar in both clinical conditions, although they are often larger, of longer duration, and show areas of necrosis in chronic arthritis. The isolation of streptococci from 70.6 per cent of nodules from chronic arthritic patients, has seemed of some etiological significance.

3) In a series of 1000 ambulant patients with clinical rheumatoid arthritis; rheumatic heart disease was definitely present in 22 (2.2 per cent) as compared with 8 (.8 per cent in a control series). In such a clinical study it may well be that there were a number of sub-clinical undiagnosed cases. The incidence of definite rheumatic heart involvement was about the same in a group of ambulant patients with rheumatoid arthritis of insidious clinical onset and in a control group. The incidence of rheumatic heart involvement was significantly high, in a group of patients with rheumatoid arthritis of acute febrile onset, in 10 of 52 patients (19.2 per cent). From reports of autopsy and clinical studies it is probable that the incidence of rheumatic heart disease is also significantly high in selected patients with severe extensive rheumatoid arthritis.

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Table I

Incidence of Subcutaneous Nodules According to
The Decade of Onset of Chronic Arthritis
(841 Cases)

Age group at onset	Total Number of Patients	Number of Nodules	Percentage of Nodules
0 - 9 years	7	0	0
10 - 19 years	73	19	26
20 - 29 years	133	33	24.7
30 - 39 years	166	41	24.7
40 - 49 years	212	66	31
50 - 59 years	154	37	24
60 years and over	96	29	30
Total	841	225	26.6

Table II

The Incidence of Clinical Rheumatic Heart Disease
in Patients with Chronic Rheumatoid Disease
(1000 cases and control series)

Age Group	No. Cases	Chronic Rheumatoid Disease with heart Involvement		Control Group with heart Involvement	
		No. Cases	Per Cent	No. Cases	Per Cent
0 - 19 years	26	2	7.7		
20 - 29 years	86	5	5.8	1	1.2
30 - 39 years	165	5	3.0	3	1.8
40 - 49 years	240	6	2.5	1	.4
50 - 59 years	250	1	.4	1	.4
60 - 69 years	181	1	.55	2	1.1
70 - 79 years	52	1	1.9	0	
Total	1000	21	2.1%	8	.8%

(Pearson's Chi square formula has been applied to these comparative studies of incidence and shows the probability of this difference as not being of significance as 3 in 100)

References

1. Wetherby, Macnider
Chronic Arthritis, A Clinical Analysis of Three Hundred and Fifty Cases.
Arch. Int. Med. 50, 926, '32.
2. Hillier,
Diseases of Children, Philadelphia, 1868, cited by Jacki
E. Frankfurt. Ztschr. f. Path., 1919-20, 22, 82.
3. Meynet, P.
Rheumatisme Articulaire Subaigu avec Production de Tumeurs Multiples
Lyon Med., 20, 495, '1875
4. Coates, V. and Coombs, C. F.
Observations on the Rheumatic Nodule
Arch. Dis. Child., 1, 183, '26.
5. Hawthorne, C. O.
Rheumatism, Rheumatoid arthritis, and Subcutaneous Nodules
J. and A. Churchill, London, '00.
6. Dawson, M. H. and Boots, R. H.
Subcutaneous Nodules in Rheumatoid (infectious) Arthritis.
J.A.M.A. 95, 1894, '30.
7. Dawson, M. H.
A Comparative Study of Subcutaneous Nodules in Rheumatic Fever and Rheumatoid Arthritis
Jr. Exp. Med. 57, 845, '33.
8. Clawson, B. J. and Wetherby, M.
Subcutaneous Nodules in Chronic Arthritis
Amer. Jr. Path. 8, 283, '32.
9. Hawthorne, C. O.
On Subcutaneous Nodules
Brit. Med. Jr. 1, 109, '38.
10. Klinge, F.
Der Rheumatismus; pathologisch-anatomische und experimentell-pathologische Tatsachen und i. Auswertung für das ärztliche Rheumaproblem.
Ergeb. d. allg. Path. u. path. Anat., 27, 1, '33.

11. Findlay, L.
The rheumatic infection in childhood
London, Edward Arnold and Co., '31.
12. Hirschsprung.
Jahrb. f. Kinderh. 1881 N.F. 16, 329.
Cited by Frank, P. Berl. Klin.
Wchnschr., 49, 1358, '12.
13. Clawson, B. J.
Experimental Subcutaneous Rheumatic
Nodules
Amer.J.Path. 4, 56, '28.
14. Billings, F., Coleman, G. H.,
and Hibbs, W. G.
Chronic Infectious Arthritis.
J.A.M.A., 78, 1097, '22.
15. Gross, L.
The Blood Supply to the Heart in
Its Anatomical and Clinical Aspects.
New York, Paul B. Hoeber, Inc., '21.
16. McCrae, T.
Modern Medicine: Its Theory and
Practice
Philadelphia, Lea and Febiger, '15.
17. Coates, V.
The kinship of rheumatic fever and
rheumatoid arthritis
M.J. and Rec., 133, 55, '31.
18. Monroe, R. T. and Walcott, C. F.
The incidence of cardiovascular
disease in chronic arthritis, in
medical papers dedicated to Henry
Asbury Christian, Physician and
Teacher, in honor of his 60th birth-
day, Baltimore, Waverly Press, Inc.,
918, '36.
19. Kahlmeter, G.
De l'existence de lesions myocar-
diques et valvulaires dans les
diverses formes de polyarthrites
chroniques et des conclusions qu'
on en peut tirer touchant l'etio-
logie et le groupement clinique des
polyarthrites chroniques,
Acte Med. Scand. Supp. 59, 611, '34.
20. Boas, E. P. and Rifkin, P.
The heart in arthritis deformans
J.A.M.A. 82, 1596, '24.
21. Grzimek, N.
Neber die Häufigkeit des Zusammen-
treffens von Arthritis deformans
und chronischer Endokarditis
Virchows Arch.f.path.Anat. 286, '32.
22. Baggenstoss, A. H. and Rosenberg,
E.F.
Cardiac lesions associated with
Chronic Infectious Arthritis.
Arch.Int.Med. 67, 241, '41.
23. Fingerman, D. L. and Andrus, F. C.
Visceral lesions associated with
Rheumatoid Arthritis
Am.Rh.Dis.3, 168, '43.
24. Strümpell, A.
Lehrbuch der speciellen Pathologie
und Therapie der inneren Krankheiten
für Studierende und Aerzte
Leipzig, F. C. W. Vogel, Vol.3, 525,
'02.
25. Pribram, A.
Chronischer Gelenkrheumatismus und
Osteoarthritis deformans,
In Nothnagel, H. Specielle Patholo-
gie and Therapie, Vienna A. Holder,
Vol. 7, p. 5p. 62, '02.
26. Kast, L.
Ueber das Verhalten der Herzaffec-
tionen bei chronischen gelen-
krheumatis, resp. arthritis defor-
mans.
Prog.Med.Wchnschr. 26, 493, 508,
521, and 531, '01.

III. GOSSIP

During the spring vacation period I have concentrated attendance at meetings of one sort or another. Tuesday to Fort Snelling to speak to the Officers' Group in the absence of Endocrinologist Edward H. Rynearson of the Mayo Clinic who was ice-bound in Rochester. I was most interested to hear the report on virus diseases by C. A. Evans of the Department of Bacteriology as he made an outstanding contribution. I have not heard this subject as well presented by anyone else. He carried us just as far as our knowledge would stretch and gave us many new ideas to think about. It is the type of presentation which would do much to dispel loose thinking in this field. Wednesday to luncheon to meet Dr. Sebrell, noted nutritionist, of the U. S. Public Health Service, an interesting visitor who told us of changes which were taking place in the field of Nutrition. Thursday to speak to a student group at Mechanics Arts High School in St. Paul, and I tried to define the word "gentleman." The assistant principal who followed did a much better job for he defined a gentleman as a "tired wolf." A young lady made an appeal to her fellow students to donate their blood at the blood bank, telling all, 18 and over, that they would be welcome. There are few meetings today where one does not hear this plea successfully made. In evening to dinner to celebrate St. Patrick's Day eve and many Irishmen were present as well as those with Irish names. There was no talk of politics probably because we did not want to hurt the Swedes' feelings in their stand on neutrality. There was a story telling contest in which one vied with the other as to top story telling. The top teller was County Attorney Michael Dillon who told real ones. St. Patrick's day dinners have changed greatly with the passing of the years, but the humor still remains. Friday to a circus with the children to see the clowns and by far the best act was the performing bears. Altho the circus is smaller than usual, it seems they have built it up to more dramatic climaxes and it is as interesting as ever. When the circus fails to thrill, there must be something wrong with the arteries. In evening to a special dinner at our home for Patrick James O'Brien, born six years ago this date. Monday to speak to College Women's Club on problems of children. I told them of the report which indicated that fathers and mothers or fathers did best in raising children. High School and College students told us that in households where the father was boss, they liked it, where the mother and father were boss, they liked it, but when the mother was dominant and the father was recessive, they didn't care for it and over 60% wished it had been different. I stepped in a hornet's nest for immediately all the women whose husbands were in service asked me what they should do. Of course I didn't mean widows. Tuesday on the 4:00 o'clock Zephyr to Winona. The train left a few minutes late but quickly made up the time. It was a pleasant and swift ride and before long I was met at station by representative of Winona General Hospital who took me to hotel for dinner. We honored the women who have given their volunteer services to the hospital during its help shortage. They cover an excellent group and even the male members of the hospital board were much in evidence. I spoke on recent advances in medicine and the part they were playing in hospital service. One of the most characteristic features of a family is the way they spend Sunday night. The lady next to me said it was their custom to pop corn and put it in cereal bowls covered with milk. Wednesday to speak to a Farm School group on victory gardening, a subject about which I know little but about which I receive much publicity. The crowd was more interested in learning whether they should treat their potatoes before they put them into the ground, how many eyes to put in each hole, and whether potatoes which had already sprouted were of any value. Thursday to a luncheon at the Council of Social Agencies to discuss the formation of a single reception center for returned veterans. It seems that returned veterans are instructed to go to their draft board, and from there they are sent to the U. S. Employment Bureau. If they do not need employment, the problem of helping them seems to be in a haze. A central agency in which all the various groups would be represented is the logical solution. To another High School on Friday to speak to

the children at assembly and the master of ceremonies wore a long coat like the pictures in the paper. He is not the school's outstanding scholar but his teachers are not worried about him because there will be plenty of nightclubs where his talents can be displayed. Also heard three young ladies sing "Love, Love, Love," one of the popular hits of the day. The counselor felt they would not have trouble in getting a job for soon they would be singing in the same places as the M.C. In the afternoon by bus to Hector, Minnesota to speak to a group at the High School. Because I cannot leave until six, I asked the representative to meet me in Glencoe to complete the trip. Instead they wish to send a plane after me, saying a young girl in the town is an excellent person to bring me out but I tell them that I cannot start as my time is so limited. I have visions of a hedge hopper crate but when I get to Hector I discover that Hector is the most airminded city in the United States, as practically everyone flies. They have contributed more men to the air corps than any city of their size in the country, and flying is commonplace with them (but it isn't with me). Saturday to the radio to transcribe my message in anticipation of the celebration of my 16th year on the air the following week.....