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THE JOURNAL-~~L~~ANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota, and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations

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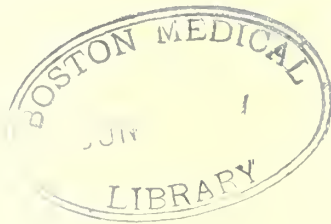
A SEMIMONTHLY MEDICAL JOURNAL

W. A. JONES, M. D., Editor

VOLUME L

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1930



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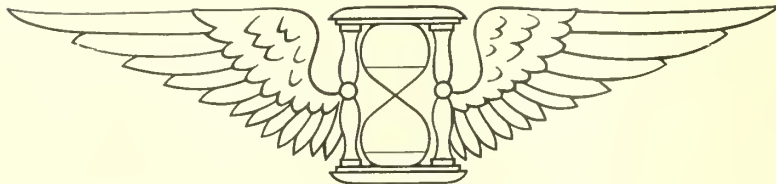
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CARCINOMA OF THE BREAST*

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The surgical treatment of malignant disease of the mammary gland is based on the theory that at the onset the disease is localized to the breast and becomes disseminated to other parts of the body by permeation through the regional lymph vessels or by direct transmission through them. The rapidity with which such metastasis takes place depends on the degree of malignancy. If this conception of the disease is true, it is obvious that the time in which surgical intervention is instituted is significant in the prognosis, and emphasizes the importance of early diagnosis.

Last year I reported the results in a series of 1,859 cases of carcinoma of the breast in which operation was performed at the Mayo Clinic from 1910 to 1923. The study showed that the best results were obtained in cases without lymphatic involvement in which primary radical amputations were performed. In the group without lymphatic involvement, 80 per cent of patients were living three years, 67 per cent five years, and 53 per cent ten years after operation. These results are probably more satisfactory than the results of surgical treatment of malignant disease elsewhere in the body, and I do not believe that a more radical operative procedure than the one now generally performed will improve these results materially. It is unfortunate that the cases without lymphatic involvement comprise only 34 per cent of the total number of cases

operated on. In the remaining 66 per cent, metastasis was found in the axillary nodes at the time of operation. The results in these cases were as follows: 41.5 per cent of patients were living three years, 25.75 per cent five years, and 12.23 per cent ten years after operation. (Table I).

A comparison was made of the results obtained when treatment by roentgen ray supplemented the radical surgical procedure with the results in those cases in which the roentgen ray was not used. The results were not improved in cases in which the roentgen ray was used as an auxiliary to surgical treatment. The practical significance of this comparison is that the surgical result depends on the thoroughness with which the operation is performed; the roentgen ray cannot be depended on to remove malignant tissue which has been left behind. The study indicates that if the surgical results in cases of carcinoma of the breast are to be improved, the percentage of cases in which there is lymphatic involvement at the time of operation must be decreased.

In a review of the surgical results year by year, I found that there was a gradual improvement from 1910 to 1915; from 1915 to 1923 the results were practically the same, varying in direct proportion to the degree of malignancy and the number of cases in which there was lymphatic involvement at the time of operation. The average percentage of cases in which there was lymphatic involvement from 1910 to 1915

*Read before the Yankton District Medical Society, Yankton, South Dakota, October 10, 1929.

was 59 per cent and from 1915 to 1923, 67 per cent. Undoubtedly a more thorough search is being made for metastatic lymph nodes in recent years, since their prognostic significance has been clearly demonstrated. This undoubtedly accounts for a part of this increase. The point of most significance is that these patients are not operated on earlier in the course of the disease.

I recently made a study of the clinical histories of 3,038 cases in which operation was performed from 1910 to 1927. This study was made primarily to determine the average duration of the tumor, its usual site, and the more common and significant symptoms.

There was very little variation from year to year in the age of occurrence. No period after puberty was immune to malignancy. It was found at all ages from seventeen to eighty-four years. The two decades of life which presented the greatest age incidence were between forty and fifty years (35.13 per cent) and between fifty and sixty years (29.32 per cent); thus almost 65 per cent were noted between the ages of forty and sixty years.

Table II is based on 2,457 cases in which the site of the tumor was definitely stated. The incidence of occurrence and the number of cases in which the tumor was found in different areas of the right breast are compared with that of the left breast. Malignant disease occurred in the left breast in 52.5 per cent of cases and in the right breast in 47.5 per cent.

The most common site of the malignant lesion was in the upper outer quadrant of the breast, more than twice as common as in other quadrants of the breast. In 2.93 per cent a definite tumor was not palpable and the lesions presented a diffuse swelling of the entire breast. The cases presenting lymphatic involvement in the different areas were studied. An appreciable difference was not found; such involvement seemed to depend more on the degree of malignancy than on the site of the tumor.

Most malignant tumors of the breast are single. In this series 98.8 per cent were single and 1.2 per cent were multiple, varying from two to thirty-three lesions in one breast. These cases were all verified at operation. Whether the multiple lesions are the result of metastasis from one focus or from multiple foci, is a debatable problem for the pathologist but there is strong evidence to support the latter hypothesis.

A definite tumor was found in 93 per cent of cases. Attachment of the overlying skin was noted in 58 per cent of these, and in 71 per cent

lymphatic involvement was present at the time of operation. Attached skin is often considered one of the chief diagnostic symptoms in malignant lesions, but if diagnosis is postponed until this occurs approximately three-fourths of the patients will have mesastasis to the lymph nodes and only palliation can be expected from operation.

The clinical value of the subjective sensations or variations of pain is questionable. In many instances the female breast has been so painful during lactation and menstruation that these patients become more or less accustomed to pain and do not pay much attention to it unless it is severe or unusual. In this study it was found that 47 per cent of patients had had pain at some time during the growth of the tumor. A burning sensation was noted by 2.7 per cent of the patients, soreness by 1.74 per cent, drawing sensation by 0.95 per cent, and an itching sensation by 0.53 per cent; 53 per cent did not have pain. This shows clearly that pain is of little, if any, value as a diagnostic symptom. (Table V).

Trauma is often believed to be of significance etiologically. In this series, however, only 324 (10.6 per cent) of patients gave a history of injury. Trauma is more likely to be the initial factor in causing the patient to examine the breast and find the tumor which had been present previous to the injury.

A serous or bloody discharge from the nipple should be regarded as an important clinical symptom. In 304 cases (10 per cent) of this series one of these conditions had been present. A serous discharge often is not considered of serious significance. In this group evidence of serous discharge was present in 59 per cent, and of bloody discharge in 41 per cent. This emphasizes the importance of considering either serous or bloody discharge from the nipple as a possible sign of malignant disease of the breast.

The incidence of lymphatic involvement from 1910 to 1927 is tabulated in Table IV. There has been little variation in the percentage of cases of lymphatic involvement, particularly in recent years. From 1910 to 1918 the average percentage of cases in which there was lymphatic involvement was 63.09, and from 1918 to 1927 it was 67.2. This increase of about 4 per cent is because lymphatic involvement either is found more often or that patients are seen later in the course of the disease. It demonstrates clearly why the surgical results of carcinoma of the breast have been more or less stationary in recent years. I traced these cases through the

same period of time to determine the average duration of the presence of the tumor before operation, and found it to be nineteen and forty-four hundredths months. This indicates the probable duration of the tumor, as in many instances it has been present for a long time before the patient's attention had been drawn to it, and it is reasonable to assume that the average actual duration is much longer than nineteen and forty-four hundredths months. In reviewing the average duration from 1915 to 1927, it was found that it varied from seventeen to twenty-two months and that in 1926 it was twenty months. This indicates that little progress has been made in the education of the public as to the possible serious significance of the presence of tumors of the breast.

When patients present themselves for examination, a great responsibility is assumed by the physician in determining whether the tumor is malignant. If the malignant process is obvious from our present clinical signs, the disease is usually quite advanced and it is often a question of whether or not the lesion is operable. The greatest responsibility is presented in the borderline cases because it is in this group that the best surgical results may be effected. Since there are no definite clinical signs of early malignant lesions, the only safe course to follow is to remove the tumor for microscopic examination. Excision should be wide, well away from the limits of the tumor and without trauma to the lesion. I prefer to make a wedge-shaped excision of all the tissue surrounding the tumor. The microscopic diagnosis should be made immediately while the patient is on the operating table and if the tumor is found to be malignant, the operation is completed as a radical amputation. This procedure has been fairly well standardized and consists of a wide excision of the skin over the breast with complete removal of the tissue, including the underlying pectoral muscles, the regional lymphatic vessels, the fascia of the rectus muscle, and the axillary lymph nodes. The underlying principles of this procedure is to remove completely all of the diseased tissue and the accessible regional lymphatics through which the malignant cells may metastasize. The prognosis depends on the completeness with which the diseased tissue has been removed at the initial operation. I compared the results of the primary radical amputation with the secondary radical amputation following a primary minor operation elsewhere. The operative results were less satisfactory after secondary radical amputation than in cases in

which primary operation was performed. In cases in which secondary radical amputation was performed, 12 per cent fewer patients were living three years, 6 per cent five years, and 4 per cent ten years. This is explained by the fact that 79 per cent (13 per cent more) of these patients had lymphatic involvement at the time of operation.

The incidence of bilateral carcinoma appearing simultaneously, and in the remaining breast following radical amputation of one breast, is shown in Tables V, VI, VII, and VIII. In the 3,038 cases there were twenty cases in which bilateral radical amputation was performed at one operation (Table V). In eighteen of these there was lymphatic metastasis; the average length of life after operation was twenty-one and five-tenths months. Five patients with lymphatic metastasis not treated postoperatively with roentgen ray lived an average of twenty-five months. Twelve patients treated postoperatively with roentgen ray lived an average of twenty months. One patient is still living, nine months after operation. There were two patients without lymphatic metastasis at the time of operation; one lived nineteen months and one thirty-one months after operation. These data illustrate the infrequency of the occurrence of bilateral malignant disease. The disease in these cases was considered primary in both breasts, but as in the case of multiple tumors there is possibility of metastasis from a single focus. The prognosis is grave and treatment by roentgen ray does not improve the results obtained from operation.

In forty-two cases (Tables VI, VII, and VIII) carcinoma developed in the remaining breast following radical amputation on the other breast for malignant disease. The operative results in these cases were more satisfactory than in cases of simultaneous carcinoma. Lymphatic metastasis was present in twenty-eight cases (Tables VI and VII). Twenty-two of the patients died of the malignant disease since operation; data concerning these have been obtained (Table VI). The average interval between the occurrence of the second lesion and operation in these cases was seventeen and twenty-five hundredths months and the average length of life from the time of the first operation was thirty-eight months (Table VI). Six patients with lymphatic involvement were living when last heard from in January, 1929; the interval between operations is much longer, the average being forty-two and sixty-six hundredths months (Table VII).

Lymphatic involvement was found in all but six of the forty-two cases at the time of the first or second operation (Table VII). Only one of these six patients is dead; death occurred from heart trouble. The average interval between the operation and the occurrence of second malignant lesions was thirty-nine and eighty-three hundredths months. The results in these cases are satisfactory and compare favorably with cases of unilateral malignancy without lymphatic metastasis.

In eight cases of the entire series a lesion was noted in the opposite breast at the time of the first operation and later malignancy developed in that breast (Table VIII). In one case lymphatic involvement was not found at the first operation but was found at the second operation. The average interval between operations was fifteen and twenty-eight hundredths months. Three patients were given roentgen-ray treatment after the first operation; the average interval between operations was sixteen and eight-tenths months. One of these patients did not die from malignant disease. Five patients did not receive roentgen-ray treatment after the first operation, and the average interval between operations was seventeen and six-tenths months. The average length of life after the first operation was twenty-two and fourteen-hundredths months. The operative results in this group closely simulate the results in cases of bilateral carcinoma and it is probable that the lesion was malignant at the time of the first operation in most cases. The roentgen ray had no effect in retarding the prognosis of the lesion in the opposite breast.

In one case (case 57) the malignant lesion followed pregnancy after the first operation. This is the only case in which there was a record of pregnancy occurring after the first operation. The radical amputation was performed on the first breast six years prior to pregnancy; lymphatic involvement was not found at the time of operation. The patient died eight months after radical amputation of the remaining breast. The prognosis is very grave in these cases. In 1928, I reported a series of twenty-eight cases of carcinoma developing in lactating breasts of which the average length of life was one and a half years after operation. As a rule, these cases should not be considered surgical.

CONCLUSIONS

1. Definite progress has not been made in instituting surgical treatment early in the course of malignant disease of the breast.

2. The present clinical methods are inadequate to detect malignancy until it is fairly well advanced.

3. A microscopic examination should be made in all doubtful cases, followed immediately by radical operation if the lesion proves to be malignant.

4. The best surgical results are obtained from primary radical operation in cases without lymphatic involvement.

5. Treatment by the roentgen ray has not been of definite value as an auxiliary to operative treatment.

TABLE I
PRIMARY RADICAL AMPUTATIONS
(1915 to 1923)

	Lived 3 years		Lived 5 years		Lived 10 years		Cases
	Cases	Per cent	Cases	Per cent	Cases	Per cent	
With roentgen-ray treatment	292	42.50	181	26.34	15	8.38	687
Without roentgen-ray treatment	53	37.85	32	22.85	20	18.69	140
Total	345	41.71	213	25.75	35	12.23	827
	Without lymphatic involvement		With lymphatic involvement				
With roentgen-ray treatment	251	80.70	206	66.23	27	46.55	311
Without roentgen-ray treatment	94	79.00	84	70.58	45	57.69	119
Total	345	80.23	290	67.44	72	52.94	430

TABLE II
SITE OF LESION
(JANUARY 1, 1910 to JANUARY 1, 1927)

	Right breast		Left breast		Total	
	Cases	Per cent	Cases	Per cent	Cases	Per cent
Upper outer quadrant	508	43.53	541	41.93	1048	42.65
Upper inner quadrant	217	18.59	255	19.76	471	19.16
Lower inner quadrant	92	7.88	104	8.06	197	8.01
Lower outer quadrant	179	15.33	202	15.65	382	15.54
Center	131	11.22	156	12.09	287	11.68
Diffuse or entire	40	3.42	32	2.48	72	2.93
Total	1167	47.50	1290	52.50	2457	

TABLE III
CLINICAL DATA
(JANUARY 1, 1910 to JANUARY 1, 1927)

	Cases	Per cent
Cases reviewed	3038	
Tumor	2812	92.56
Attached to skin		58.45
Lymphatic involvement		71.24
Multiple tumors	31	1.02
Pain	1420	46.74
Burning sensation		2.70
Soreness		1.74
Drawing sensation		0.95
Itching sensation		0.53
Trauma	324	10.66
Discharge from nipple	304	10.00
Serous		58.89
Bloody		41.11

TABLE IV
LYMPHATIC INVOLVEMENT AND DURATION OF LESION
(JANUARY 1, 1910 to JANUARY 1, 1927)

Year	With lymphatic involvement		Without lymphatic involvement		Preoperative average duration of lesions, months	Cases
	Cases	Per cent	Cases	Per cent		
1910	52	53.06	46	46.94	32.00	98
1911	56	59.57	38	40.43	37.50	94
1912	61	61.00	39	39.00	16.36	100
1913	76	57.14	57	42.86	18.25	133
1914	80	56.33	62	43.67	27.17	142
1915	105	66.45	53	33.55	17.80	158

1916	134	74.44	46	25.56	18.12	180				Without lymphatic involvement		
1917	125	66.84	62	33.16	17.61	187	19	43	None	None	19	
1918	137	67.15	67	32.85	13.60	204	20	60	None	None	31	
1919	160	71.42	64	28.58	20.86	224						
1920	135	66.50	68	33.50	16.55	203						
1921	125	60.09	83	39.91	16.83	208						
1922	136	69.03	61	30.97	19.65	197						
1923	153	70.18	65	29.82	22.09	218						
1924	138	63.01	81	36.99	16.94	219						
1925	174	69.60	76	30.40	15.38	250						
1926	149	66.81	74	33.19	20.25	223						
Total	1996	65.70	1042	34.30	19.44	3038						

TABLE VI
BILATERAL ADENOCARCINOMA IN WHICH LESION IN ONE BREAST APPEARED AFTER OPERATION ON OPPOSITE BREAST: RESULTS IN FATAL CASES* (JANUARY 1, 1910 to JANUARY 1, 1927)

BILATERAL ADENOCARCINOMA (BILATERAL AMPUTATION AT ONE OPERATION) (JANUARY 1, 1910 to JANUARY 1, 1927)					Case	Age, years	Months between operations	Months of life after first operation
				With lymphatic involvement Treatment				
Case	Age, years	Roentgen ray	Radium	Months of life after operation				
1	34	None	None	25.5	21	29	3.5	12
2	37	+	+	22.5	22	33	18.5	29
3	38	+	None	7	23	36	7.5	10
4	43	+	None	41	24	38	13	22
*5	44	+	None	9	25	38	4	21
6	45	+	None	20	26	39	75	98
7	45	+	None	15	27	39	9.5	24
8	46	+	+	44	28	40	11	12
9	47	+	None	14	29	42	43.5	99
10	47	None	None	13	30	42	9.5	16
11	48	+	+	15	31	43	29	60
12	48	+	+	16	32	44	2.5	9
13	49	None	None	48	33	46	15	19.5
14	49	+	None	36	34	47	9	22
15	51	+	None	7	35	47	18	160.5
16	55	None	None	12	36	48	19	23
17	56	None	None	26.5	37	48	4	7
18	57	+	None	3	38	48	14	35
Average				21.5	39	52	29	78

*Lymphatic involvement was present in all but cases 24 and 39 at the first operation and in all but cases 28 at the second operation.

TABLE VII
BILATERAL ADENOCARCINOMA IN WHICH LESION IN ONE BREAST APPEARED AFTER OPERATION ON OPPOSITE BREAST: RESULTS AMONG PATIENTS STILL LIVING (JANUARY 1, 1910 to JANUARY 1, 1927)

Case	Age, years	Lymphatic involvement	Treatment by roentgen ray or radium	between operations	Months of life after first operation
43	41	At first operation		60.5	120
44	45	At both operations		31	101.5
45	45	At second operation		75.5	77
46	49	At first operation		20	48
47	56	At first operation		43.5	89
48	64	At both operations		25.5	28
Average for cases 43 to 48				42.66	77.25
*49	57		After first operation	78	80
50	54		After both operations	18.5	39
51	50		After both operations	73	86
52	50		After first operation	12.5	102
53	38		After both operations	37.5	54
54	34		After both operations	19.5	100
Average for cases 49 to 54				39.83	76.83

*All of the patients are living except the patient in case 49. This patient died of heart trouble.

TABLE VIII
RESULTS IN CASES OF BILATERAL ADENOCARCINOMA IN WHICH A LESION WAS PRESENT IN ONE BREAST AT THE TIME OF OPERATION FOR A MALIGNANT LESION IN THE OTHER (JANUARY 1, 1910 to JANUARY 1, 1927)

Case	Age, years	Lymphatic involvement	Treatment by roentgen ray or radium	between operations	Months of life after first operation
55	33	At both operations	Roentgen after both operations	9	13
*56	36	At first operation	Roentgen after both operations	31.5	49
**57	37	At second operation	Radium after second operation	71	79
58	37	At both operations	Roentgen after second operation	5	8
59	38	At both operations	Roentgen after both operations	10	18
60	39	At both operations	Roentgen and radium after second operation	4	26
61	39	At both operations	None	3	12
62	48	At both operations	None	5	20
Average				15.28	22.14

*In case 56 death occurred from pulmonary embolism following operation for uterine fibromyomas.
**Malignancy occurred in the remaining breast following pregnancy subsequent to the first operation.

CLINIC OF DR. GEORGE E. BROWN*

ROCHESTER, MINNESOTA

Cases Presented

By W. H. LONG, M.D.

Case 1—This patient is a young girl twenty-seven years of age, a stenographer, whose chief complaint is color disturbance and ulcers of the toes of both feet. During her entire life she has had cold hands and cold feet. Seven years ago the disturbance in the feet became more marked, exhibiting attacks of pallor of the toes during cold weather. This was associated with numbness. Following pallor attacks, feet have become excessively hot associated with subjective symptoms of burning. For the past two or three years, in place of attacks of local syncope, there has appeared cyanosis of the toes. Following this there were crops of dry skin ulcers on the tips of the toes. The pain in the affected digits has been very troublesome. During the past winter she has not been able to remain out of doors for more than an hour without suffering severely from pain and cyanosis.

DR. GEORGE E. BROWN: This patient represent a typical example of Raynaud's disease, which is a vasomotor disturbance of the spastic type affecting largely the vessels of the skin, and occurring predominantly in young females. The history of this patient is quite typical of the group. Early in the disease there is simply color disturbance of the hands or feet brought on by cold, more rarely by psychic disturbances. The color disturbance, which is first exhibited by pallor is followed by cyanosis and coldness of the extremities. Recovery is associated with redness and increased local heat. The peripheral arteries of the hands and feet reveal normal pulsations. The disease is symmetrical. The disturbance in this patient has reached sufficient degree of severity to be classified as true Raynaud's disease. It has been the rule to demand either the presence of pain or tropic disturbances for classifying it as Raynaud's disease. In the absence of these more profound changes we designate the condition as vasospastic disturbances.

In the differential diagnosis, it is important to rule out the vasospastic disturbances of secondary type such as occur in thrombo-angiitis obliterans; frequently in older subjects with arteriosclerosis diseases; peripheral neuritis; cervical rib, and other conditions.

Treatment: Successful treatment of this condition has been elucidated on in recent years. For the cure of Raynaud's disease of the feet, the second, third and fourth lumbar sympathetic ganglia and the intervening sympathetic cord are removed. Following this operation the vasomotor fibers to the vessels of the feet are destroyed. The feet become hot and dry, ulcers heal promptly, and the color disturbances disappear. The cure of these cases by this operation is most dramatic. I would recommend this operation for this patient, because the condition has progressed to the point of representing a true disability. We can offer her surgical treatment with great assurance.

Case 2.—Presented by Dr. W. H. Long, Fargo: This patient is a well-developed woman, age thirty-five, apparently in good health. She was first seen by me in February, 1929, for a blanching of the first finger of the right hand which had been present intermittently for the previous two weeks. The finger was sore and painful. During the course of the questioning she noted that blanching of the fingers on exposure to cold had been present for some time. The fingers remained quite painful since February.

DR. GEORGE E. BROWN: This patient is of interest from the standpoint of diagnosis. It is a vasospastic disturbance involving the finger. In other words, it lacks the symmetrical distribution of the essential or primary form of vasospastic disturbance of Raynaud's disease. The history is of short duration. At the present time her hand looks quite normal. There is no cyanosis or pallor present. The palpable vessels are open. This unilateral condition suggests a secondary form of the vasospastic disturbance. Dr. Long has shown me the roentgenograms of the chest of this patient; bilateral cervical ribs are present. The right is larger than the left. It is possible that this condition could be responsible for explaining irritative vasomotor phenomena. The condition is not producing disability. It can be easily controlled by immersing the hands in warm water. No drastic form of treatment would be indicated at this time in the absence of severe pain or trophic changes. She should be told that the cervical rib may be a causative factor, and if the condition becomes progressive surgical therapy may be necessary.

*Informal clinic presented at the Forty-second Annual Session of the North Dakota State Medical Association, Fargo, June 7, 1929.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of November 13, 1929

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, November 13, 1929. Dinner was served at 7 p. m. and the meeting was called to order at 8 p. m. by the President, Dr. C. N. McCloud.

There were 35 members and 1 visitor present. Minutes of the October meeting were read and approved.

A Committee consisting of Drs. J. W. Bell, Geo. D. Head, and S. Marx White was appointed to draw up resolutions on the death of Dr. Louis A. Nippert.

The scientific meeting consisted of the following:

Dr. H. A. H. Bouman (Minneapolis) read an historical study of "The Goiter Problem and Theodor Kocher."

DISCUSSION

DR. GUSTAV SCHWYZER (Minneapolis): We have listened tonight to an essay which is the result of an extensive historical study concerning goiter surgery and its founder Theodor Kocher. Nowadays when thyroid surgery is being done all over the world, it may be timely to bring out the life of the man who did most of the pioneer work in this line.

Dr. Bouman's paper is indeed laudable and commendable. He refers to many of the circumstances of historic interest that surrounded the men who began goiter surgery, and mentions the obstacles these pioneers had to overcome. He calls to our attention Billroth, who was Professor of Surgery in Zurich about 1860-67. I well remember one of his papers on goiter surgery that I read years ago. He reported a small number of goiter cases and of these most of them died from tetany. This mortality rate exceeded Kocher's. The latter's success might have been due to his careful way, his method in handling the recurrent nerve and leaving what we call to-day the safety zone—all such procedures at a time when parathyroids were unknown.

Dr. Bouman's essay does not, in my estimation, call for discussion; however, if you will allow me I will add a few words about Theodor Kocher with whom I was intimately connected in the nineties. He was a brilliant teacher. His clinics were world famous. Anyone who ever had the privilege to attend one of his clinics could not help being impressed by the magnitude of his knowledge and the accuracy of his diagnosis.

Kocher was not only a brilliant teacher, he was also a great leader as surgeon and writer. Over 200 papers were published in different journals during his activity. He collected the important facts from his material and compiled them into book form for permanent reference. His book on fractures is even to-day a very commendable work. Another book, which has never been translated into

English, on lesions of the spine due to injury or fracture was not only of great surgical interest but an addition to physiology of the spine as well. His work on staphylococcosis and streptococcosis is unique. His book on operative surgery truly expresses the vast wisdom he amassed in his lifetime. There is no phase of surgery wherein Kocher did not do original work.

Always trying to get nearer and nearer the truth, he never missed an opportunity to attend a post-mortem examination during his forty-five years of activity at his clinic in Berne.

His endurance for work was simply marvelous and remained so until his last days. Just two days before he died in his seventy-fourth year, he successfully performed an extensive abdominal operation.

I think we all feel grateful to Dr. Bouman for his interesting review on goiter surgery that he has given us to-night.

Dr. J. T. Christison (St. Paul) reported a case of Subacute Aleukemic Lymphatic Leukemia in a young boy, and showed lantern slides.

The patient, a small Canadian boy of 6 years, was admitted to the Charles T. Miller Hospital on September 8, 1929, complaining of fluctuating temperature, anemia and listlessness.

The child was perfectly well until March, 1928, when he suddenly became ill with a sore throat and high fever. He was confined to his bed for about five weeks. His temperature became normal after three weeks' time, when desquamation of the hands and feet was noticed. He had no urinary symptoms, and the father does not recall the child having a cough, nor did he notice a rash. Following this illness the child was pale and listless, but the father was not aware of any elevation of temperature.

Sometime early in August, 1929, the mother noticed a marked change in the child. On awakening in the morning he would complain of being very tired and preferred to remain in bed. There was a slight elevation of the temperature at this time and there were noticed black and blue spots over the body, varying in size up to that of a silver half dollar, and apparently spontaneous.

The patient was not a bleeder, although he had had one nose bleed in the latter part of August, which was very mild and lasted only a few minutes.

At the onset of this illness in August the child complained of his legs hurting and seemed to have a painful right knee, at times walking a little stiff.

On September 6, 1929, the child was taken to a hospital in Canada where the father was told that the child had a very bad heart. He was kept in the hospital one day, receiving no treatment nor medication except aspirin (5 grains every hour for 12 hours). While there his temperature varied from 101.4 to 106 degrees and his pulse from 130 to 148.

The child was then brought to St. Paul and admitted to the Miller Hospital.

Investigation brought out the fact that the child had had no other illness except those already mentioned. He had a tonsillectomy about five years ago, was a breast-fed baby, having been delivered normally.

The child's father and mother, 38 and 36 years of age respectively, are apparently well, although it was learned that the mother gets very pale at times and has dyspnea on exertion. The father, at the time this history was taken, also looked very pale. One sister, 10 years, and one brother, 4 months, are well, although there is a history of eczema and asthma in these two children. One brother died at 13 months of influenza. There is no history of eczema or asthma in the parents or grandparents; nor is there a history of tuberculosis, and it is not known that there were any bleeders in the family.

The father stated that the child passed very large amounts of urine rather reluctantly, complaining of pain. Previous to hospital entry no blood had been noted in the urine.

The child had not been constipated nor had he had diarrhea, and no blood had been noted in the stools.

There had been no swelling of the hands or feet.

A blood transfusion was done on the day after admission to the hospital (September 9) and 500 c.c. of blood given. The patient was classed in Group IV, as were his donor and the two bloods matched without agglutination. Before the transfusion his blood was: Hb. 23%; red cells 1,550,000; leucocytes 5,350; granulocytes 3%; lymphocytes 97%, and platelets 52,500. After the transfusion his blood was: Hb. 48%; red cells 3,340,000; leucocytes 4,300; granulocytes 4%; lymphocytes 91%.

On September 18, a blood pressure cuff was applied to the left arm and the mercury kept between 95 and 102 mm. The forearm was covered with a light cradle and in 6 minutes the arm suddenly became covered with small petechial hemorrhages.

On this date he was again transfused, receiving 500 c.c. of blood, the donor this time also

being in Group IV and the two bloods matching without agglutination. Before transfusion his blood was: Hb. 48%, red cells 3,340,000; leucocytes 7,750; granulocytes 4%; lymphocytes 93%; and platelets 32,500. After transfusion it was: Hb. 60%; red cells 3,800,000; leucocytes 4,350; granulocytes 4%; lymphocytes 92%, and platelets 97,500.

A consultation by Dr. Connor, of the Nose and Throat Department, disclosed an existing condition of herpes labialis and pale mucous membranes; also a suggestion of thickening of the buccal surface of the gingiva and buccal pads, a scar of a healed ulcer between the upper right first and second bicuspid, and although the tonsils were out there was one small follicle at the base of each fossa. The nose was negative except for pallor and slight septal erosion on each side. There was no sinus infection.

Two weeks later the findings were the same except for the presence of enlarged hemorrhagic follicles in the pharyngeal wall.

On October 4, three teeth were extracted under nitrous oxid anesthesia.

On October 10, the patient was again transfused. He received another 500 c.c. of blood, his donor being classed in Group IV and the two bloods matching without agglutination. This time his blood before transfusion was: Hb. 50%; red cells 2,810,000; leucocytes 6,350; granulocytes 0.4%; lymphocytes 96%; and platelets 28,000. After the transfusion it was: Hb. 68%; red cells 3,750,000; leucocytes 8,050; granulocytes 5%; lymphocytes 95%; platelets 24,000.

Examination on October 22 showed a petechial rash over the lower extremities and mucous membrane of the mouth. A general reticulo-endothelial proliferation was seen. All glands were moderately enlarged and somewhat hard. At the costal margin the spleen was felt to be somewhat enlarged, though not of lymphatic leukemic type. The liver was also felt at the costal margin.

On October 24, under nitrous oxid anesthesia, several small lymph nodes were removed from the right axillary region. The largest of these was about 5 millimeters in diameter. Microscopic examination showed the prominent feature of the sections to be the diffuse infiltration of large lymphoid cells throughout the nodes, which obliterated the sinuses. The capillary endothelial cells were swollen and prominent everywhere. Diffuse hemorrhage was noted in some areas. The recticulum fibres and recticulum cells were prominent in some parts. The

capsules were apparently unbroken. One showed a thickening, edema and hemorrhage and invasion of lymphoid cells into it. A diagnosis of leukemic infiltration of the lymph nodes was made.

At this time the child complained of slight pain in his right knee, especially when the leg was fully extended. There was no apparent swelling, redness or palpable tenderness, and measurements of the knees were found to be exact.

Subsequent examination at this time showed the lower edge of the spleen palpable at the left lower costal margin although abdominal distension was so marked as to make palpation unsatisfactory.

During the patient's hospitalization his temperature varied from 98 to 105.4 degrees, and his pulse from 80 to 160.

All urine examinations were negative.

On September 13, his bleeding time was 3 minutes and 20 seconds, and his clotting time 5 minutes and 25 seconds. On October 23 his bleeding time was 5 minutes, and his clotting time 6 minutes and 10 seconds.

Hemoglobin ranged from less than 20% to 70%.

Leucocytes ranged from 1,200 to 12,800.

Red blood cells ranged from 890,000 to 3,990,000.

Reticulocytes from .04% to .3%.

In Schilling Differentials, granulocytes varied from 0% to 6% and the lymphocytes from 90% to 100%

Platelets varied from 97,500 to 10,000.

Widal was negative.

Blood culture was negative after four, seven, ten, twenty-one and thirty days' incubation.

Blood smear showed 97% lymphocytes. Lymphocytes were of usual mature types with normal variations in size. One per cent were immature or lymphoblast type, a common finding in cases with a marked lymphocytosis. The changes in the red cells are slight for the grade of anemia. Slight anisocytosis and slight poikilocytosis were present.

Blood smear was submitted to Dr. Downey of the University of Minnesota for his opinion. He agreed with the hospital pathologist in a probable diagnosis of leukemia, subacute stage.

Morphological study (9/30) strongly suggested subacute aleukemic lymphatic leukemia. The pathologist advised consideration of prolonged chronic infection, also.

Morphological study of smears (10/3) showed appearance of the lymphocytes to indicate many

of them were pathologic. Nuclei showed a fine delicate, more or less homogeneous chromatin network and little condensation. In a few, one or more nucleoli were noted and occasionally they were lobulated (questionable Reider type). A narrow zone of dark dirty blue cytoplasm was noted. Apparent absence of cytoplasm in some was not due to staining reaction. A few more mature large lymphocytes show a wide zone of bluish hyaline cytoplasm in which a few azure granules may be seen. Gumprecht shadows were not seen. The red cells showed little polychromasia, if any, and no basophilic granular degeneration. Platelets were very scanty. Granulocytes were less than 10 per cent of cells. Myelocytes, metamyelocytes and older metamyelocytes (band form) were recognized as much as the fully mature neutrophils, but they were very scarce. Basket cells were seen occasionally. Of course there were many fully mature lymphocytes and occasional plasma cells.

Microscopic examination of the feces showed no red blood cells, leucocytes, parasites or ova. All the usual qualitative tests for urobilin were positive.

Culture of the teeth showed a predominating growth of non-hemolytic streptococci and of staphylococci.

The patient failed rapidly the last week of his life and on the morning of October 29 he had two convulsions, and died of general exhaustion.

DISCUSSION

DR. CHRISTISON: We had an opportunity to observe this entire family. The mother was pale and decidedly anemic in appearance. She was advised to stop nursing the baby. We had blood counts made on the baby who was left in the hospital for some time, and also on the daughter. I asked Dr. Richards to investigate the mother's condition and he will tell you something about that.

The whole picture from the beginning to end was a hopeless one as most of these cases of leukemia usually are. An autopsy was done on this boy but we have not yet had time to complete all the studies. I think there will be at least something to add to the pathology of a lymphatic leukemia.

Mr. President, I would ask that you call on Dr. Ikeda who did the postmortem on this case.

DR. KANO IKEDA (St. Paul, by invitation): The pathological picture about to be described is not anything unusual, but a typical picture of an acute case of lymphatic leukemia. It is not necessary for me to describe in detail the specimens. I have brought them for you to see. The one striking thing in the external appearance is the waxy pallor of the skin without any emaciation. There were many small petechial spots over the body.

On opening the thoracic cavity nothing unusual was found. The thymus was about 20 gms. in weight, an increase which is unusual in this condi-

tion. The liver weighed about 1000 gms., a few hundred grams larger than normal in a child of this age. It was pale orange yellow in color as shown here, and this color is practically the same as when it was autopsied. The spleen weighed 125 gms., or perhaps twice the normal weight. The capsule was dark red and tense, and the cut surface showed a very firm, red pulp. The corpuscles were indistinct. In the gastro-intestinal tract, the stomach was very striking in appearance in that there were very many hemorrhagic spots over the mucous membrane. There was hyperplasia of the Peyer's patches in the terminal ileum. The kidneys weighed about 150 gms. (right) and 160 gms. (left) and showed a swollen, waxy parenchyma with areas of hemorrhages in the cortex, as seen in the specimen. There were also some petechial spots in the mucous membrane of the bladder. In a kidney of this kind you would think the function would be impaired. The urea nitrogen of the pericardial fluid showed about 20 mgms. per 100 c.c., which means that probably the function of these kidneys was not particularly impaired. No red cells were seen in the sediments of the urine obtained at autopsy. The lymph nodes, while not very large, practically every one was reddish in appearance with some hemorrhage, so that they are distinctly visualized all along the intestinal border of the mesentery and in the retroperitoneal groups. The bone marrow was hemorrhagic and showed rather solid marrow tissue. The smear made on this, and stained with Wright's stain, shows it to be practically entirely predominated by lymphoid cells. The striking picture found in these specimens is due to a terminal gush of hemorrhage which produced these hemorrhagic spots all over. (Several lantern slides of microscopic sections were shown.)

One thing I want to emphasize is the importance of a careful study of blood smears in cases of this kind, particularly when they happen to be children. This shows us a lesson. When a condition such as this occurs in practice, the ordinary blood counts alone would not be sufficient.

DR. E. T. F. RICHARDS (St. Paul): The case of the mother is interesting in connection with this child's illness. She gives a history of having been pale and anemic over a period of twelve years, although we could obtain no figures on the degree of anemia. Her age is now 37. She was said to have been particularly anemic at the time this child was born. She has never bled and there have been no other symptoms whatever except the weakness attendant on the anemia. She now shows marked pallor and a very large spleen. There is no generalized adenopathy. Her red cell count is below 3,000,000, Hb. below 40 per cent, with a leucopenia of 4,000, but nothing abnormal in the differential. She has a normal amount of free hydrochloric acid in the gastric contents.

As we do not know the cause of leukemia, one wonders if a particular type of bone marrow insufficiency may have been transmitted by the mother to the child. Then there is, in addition, the infant sister with a profound anemia.

It is a very remarkable coincidence at least, and there may be quite possibly some connection which our studies on leukemia so far have not made clear.

DR. WALTER RAMSEY (St. Paul): It is interesting that in these children with leukemia, one not infrequently finds a low leucocyte count, which often amounts to leucopenia. One can slip up on them if one is just looking for a leucocytosis. Dr. Stewart had a case of leukemia in the Children's Hospital which never had over 10,000. A high leucocyte count is not necessary in children.

Dr. H. L. Ulrich (Minneapolis) reported a thyroid case complicated with acute rheumatic fever. X-ray films were shown, and postmortem report given.

The meeting adjourned.

CARL B. DRAKE, M.D.
Secretary.

MONTHLY CLINICAL CONFERENCE AT THE MINNEAPOLIS GENERAL HOSPITAL

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

November 26, 1929

R. T. LA VAKE, M.D.

J. H. SIMONS, M.D.

MINNEAPOLIS, MINNESOTA

By J. H. SIMONS, M.D.

1. *Hyperemesis gravidarum.*

The case is that of a white female, age 24, married. Grav. II. Para I. Admitted to Minneapolis General Hospital October 15, 1929.

F. H.—Negative.

P. H.—Had usual childhood diseases; no pelvic disease, otherwise negative. C.T.A. established at 14, regular, interval 28 days, duration 5-6 days, no clots, moderate amount, slight pain during flow, cramp-like in character, located in lower abdomen.

L.M.P. March 10, 1929. Date of expected confinement, December 17, 1929.

Previous pregnancies: 1927 vomited at that time for the first four months; labor was 27 hrs., spontaneous; 2° laceration; 5½ lb. infant born at home. Puerperium negative.

Present Pregnancy: first and second trimesters: Vomiting has been persistent throughout pregnancy. Was in Minneapolis General Hospital between the following dates because of vomiting: May 20, 1929 to May 27, 1929; June 14, 1929 to June 24, 1929; July 30, 1929 to August 9, 1929. Patient was also at

a private hospital for two weeks during September because of the vomiting. Vomiting cleared up each time before the patient was sent home, and recurred each time at home after apparent recovery in the hospital. For the past month, patient has been unable to retain any solid food and only small amounts of fluid, such as water and grapejuice. She has had some headaches. Vision for the past two weeks has been so blurred that the patient could not read. Has had some edema about the ankles, especially in the second trimester. Breasts negative. Urination for the past two weeks: Urine has been brown in color, no frequency; no vaginal discharge. Has had a nose bleed since the afternoon preceding admission.

Physical Examination: Patient is 5 ft. 2 inches, nutrition fair, development good, eruption, none. Head and neck: Face very anxious expression, no edema of the face. Eyes: sclerae are yellow in color; pupils are small and react to light and accommodation; ears negative; nose, persistent nose bleed. Mouth and throat covered with old blood; teeth discolored from old blood; thyroid negative, no nodes palpable. Breasts pendulous and enlarged; skin shows very marked evidence of dehydration, colostrum present in breasts. Lungs negative. Heart negative; pulse very rapid and weak, 132 rate. B. P. 112/88. Abdomen, fundus 4 fingers below xiphoid, breech in fundus, head floating, back on left, small parts right, fetal heart tones not heard. Extremities negative. Spine negative.

Course in Hospital: Patient was fortified 500 c.c. of 10 per cent glucose intravenously and 1000 c.c. of normal saline by hypodermoclysis, retention enemas every 4 hours of 6 oz. of glucose and sodium bicarbonate. At 2:15 p. m. on October 16, 1929, a Voorhees bag was inserted and at 6:01 p. m. on the same day, patient was delivered of a premature still-born female infant; total blood loss 200 c.c. On October 17, patient was somewhat improved, pulse better quality; retained some fluid during the day, perfectly rational; showed no mental changes but complained of being tired and sleepy. On October 20, patient took fluids well, did not eat well; infection on upper lip. On October 22nd, patient had emesis of 300 c.c. of yellow foul-smelling material, complained of being dizzy and drowsy. Had developed a severe infection of upper lip which was cleared up by hot packing. October 23, patient's condition took turn for the worse during night. Started having frequent emesis and became stuporous and irrational, seemed to understand what was spoken to her but apparently could not answer. Condition persisted until late afternoon when patient began to speak again. Had hallucinations. Pulse of good quality. Patient given intravenous saline of 450 c.c. of 5 per cent sodium chloride by cutting down on vein. B. P. following intravenous was 114/80; pulse 104. Patient complained of severe headache. On October 24, a spinal puncture was done and fluid came out under apparently increased pressure, although monometer showed only 150 mm. water pressure. Following spinal puncture, patient's condition apparently improved somewhat, seemed brighter and responded more rationally. October 25, patient again took food and fluid well by mouth; no vomiting, pulse good, not entirely rational however. From November 3 until dis-

charged, improvement was continuous.

Patient seen by medical consultant on October 23 and the following report was made: "This patient is in extremely serious condition. I doubt whether she has a chance for life. There is still some scleral jaundice. Eyegrounds are negative. Patient is stuporous and cannot respond intelligently when aroused. I suspect there are some cerebral hemorrhages in addition to a slight degree of hepatitis and a renal insufficiency and low blood chlorides. Choostek and Trousseau are negative. I would suggest as therapy, large hypodermoclysis of salt solution and intravenous 50 per cent of sugar injections. I am inclined to link up low chlorides and high blood urea with loss of H₂O, from vomiting."

Blood pressure during stay in hospital ranged from 120/100 to 104/60. Temperature ranged from 100.2° to 97°. Pulse ranged from 120 to 60.

Laboratory: On admission, October 16, urine, amber, specific gravity 1020, acid reaction, 3+ albumin, trace of sugar, 3-4 r.b.c., 13-15 pus cells, 4+ bile, catheterized. Blood: Hgb. 90; R. B. C. 4,500,000; W. B. C. 12,700; Wassermann negative. Blood sugar .16. Urea nitrogen 70.9. Non-protein nitrogen 168. Urine specimens continued to show albumin from 3+ to a trace and continued to show red blood cells and pus cells and bile in catheterized specimen. Tyrosin and leucin not found. Liver function 40 per cent. Blood chlorides on 10/16/29 were 299 mgms. Vanderbergh on 10/22/29, direct immediate negative, direct delayed 2+, indirect 1+, icterus index 23. On October 23, urea nitrogen 17.7, VanSlyke 78. On October 28, chlorides 297 mm., VanSlyke 48; Vandenbergh, direct immediate negative, direct delayed negative, indirect very faint trace, icterus index 20. October 31, P.S.P. showed first specimen 20 per cent excretion; second 16 per cent and total 36 per cent. Spinal fluid October 24, Noguchi negative, cell count neg., bacteria negative, Wassermann negative, colloidal gold negative, culture study negative. Vandenbergh on the spinal fluid, direct immediate neg., direct delayed negative, indirect reaction negative, icterus index 0.

Hyperemesis in pregnancy, the etiology of which is not known with any more definiteness than that of late toxemias, naturally gives rise to theories, some of which are plausible by having their basis on scientific fact, others seemingly absurd but with empiric basis and are only accepted because they lead to a treatment with valuable psychic effects.

Reflex and neurotic cases respond readily to appropriate treatment but toxemic types often resist our best efforts and insidiously or rapidly exhibit signs of impending disaster, such as extreme dehydration, hemorrhages from the mucous membranes, bloody vomitus, jaundice, exhaustion, mental aberration, delirium, and coma. Jaundice and mental symptoms give an exceptionally bad prognosis, even with therapeutic abortion which often hastens the end.

Early in this toxemia, remission may occur as in the case reported, and occur with increas-

ing severity even "up to the sixth month, but rarely after that" according to DeLee.

Pernicious vomiting is one of the clinical toxemic entities of pregnancy, of which eclampsia is of equal importance. They seem to be unrelated and probably are produced by different types of toxins, but in fatal cases both show liver changes resembling acute yellow atrophy but differentiated by pathologists in that hyperemesis shows diffuse and eclampsia a focal change; degenerative lesions in the kidneys are also present.

In hyperemesis, according to Thalheiver, Titus, and others, a vicious cycle is established when acidosis develops with glycogen and depletion of the liver. On this they base the effectiveness of glucose treatment, while VanSlyke says that acidosis is not often present and the good results are obtained by the replacement of fluids rather than the introduction of glucose.

Treatment other than therapeutic abortions, which, if instituted early enough, effect the cure, will only become rationalized and give us hope of more effective treatment when the etiology is discovered.

When this patient was admitted, the catheterized specimen showed kidney irritation, bile and a trace of sugar being present. Blood was normal except for slight leukocytosis, high urea and low chlorides. Liver damage was indicated by the Vandenberg test which also showed that it was a hemolytic jaundice and by the icterus index and liver function test of 40 per cent. Spinal puncture coincidentally or actually relieved the mental symptoms and improvement was continuous from the third day after emptying the uterus. The only condition atypical of a severe case of hyperemesis was that it occurred later in pregnancy than we ordinarily expect to find, otherwise the findings were those of a true hyperemesis gravidarum.

Discussion: Dr. Litzenberg asked whether this was a case of hyperemesis gravidarum. He believes it to be a toxemia. Dr. LaVake was of the opinion that it was a case of acute yellow atrophy. Dr. Eadler said that most of these cases, at least 75-85 per cent, start out with a definite neurosis, and in many of them one finds a focal infection, displacement, endocervicitis as a possible cause. He emphasized the necessity of thorough examination for foci of infection.

Dr. Swanson said the postural treatment should not be criticized too much as it is a new therapeutic measure and has not been watched much yet, and that we should hesitate to criticize it until it has had a thorough trial.

In answer to the questions to Dr. Simons, one of which was whether there were any peripheral nerve changes, there were none. Another in regard to eye grounds during the time patient had blurring of vision, they were reported negative. Another in regard to the condition of the fetus, it was not macerated.

BY R. T. LAVAKE, M.D.

2. Total versus subtotal hysterectomy.

The first case is that of S. B., colored female, divorced, married two years, age 29. Admitted to Minneapolis General Hospital, September 16, 1929.

P. C.—Pain in lower abdomen. Profuse vaginal discharge.

P. H.—Pertussis and measles in childhood; pneumonia at age of 19; no pregnancies. C.T.A. established at 14, regular, 28-day type; slight menstrual pains, cramplike in lower abdomen, L.M.P., September 4.

P. I.—On September 11, patient began to have pains in lower abdomen which gradually had been getting worse. No nausea or vomiting. Hot water bottle to abdomen and hot douches gave relief. She has had a profuse vaginal discharge for several months and recently has had burning on urination.

Phys.—Heart and lungs negative. Abdomen: there is a palpable tumor reaching midway to umbilicus. Pelvic: external genitals negative; profuse vaginal discharge; cervix points upward, is fixed; corpus uteri retroflexed and retroverted, normal size, mobility restricted. There is a large, firm mass filling the cul-de-sac and extending to the right and left. Anterior and to the left is another hard rounded mass. Bilateral tubo-ovarian masses are also palpable. Diagnosis: Bilateral tubo-ovarian masses Fibromyomata uteri.

Laboratory: Urine negative; Hgb. 80; R. B. C. 4,030,000; W. B. C. 10,350; P.M.N. 64; Wassermann negative.

Course in hospital: Surgical treatment was advised but was postponed because patient ran a slightly elevated temperature and had a mild leukocytosis. Patient was kept in bed 24 days and after a week with a normal temperature and a leukocyte count down to 7,500 she was operated on 10/10/29. The uterus, both tubes and ovaries were removed. Appendix was also removed. The uterus was enlarged and distorted due to the presence of numerous myomas. The ovaries were enlarged and fibrotic, the tubes were thickened and adherent.

Post-operative course: For first eleven days patient ran a febrile course; temperature ranging from 100° to 102°. Eleventh day temperature 105°, pulse 130. An infection was found present in wound on the seventh day; wound opened superficially and a large amount of pus obtained. Catheterized urine showed 75-100 w. b. c. per high power field. Patient put on pyelitis treatment. Temperature gradually came down to around 99° and remained there until the 38th day post-operative. Then for six days patient ran a septic course and a macular rash appeared on body. Diagnosis: Toxic erythema. Patient's hemoglobin went down to 55 so patient was transfused. Patient is now 47 days post-op. Wound is entirely

healed. Temperature normal for three days. W. B. C. 5,750. Urine negative.

The second case is that of M. B., white female, aged 57, widow, Grav. III. Para III. Admitted to General Hospital, September 24, 1929.

P. C.—Discharge. Vaginal bleeding. Loss of weight. Weakness.

P. H.—No illnesses or operations. Three normal full term pregnancies with spontaneous deliveries. C.T.A. negative. Menopause at age of 49.

P. I.—Patient has had a yellowish vaginal discharge for past two years. One year ago began to have vaginal bleeding, profuse enough to necessitate wearing a napkin continuously. For past year has been losing weight and becoming weaker and weaker. She came to the medicine clinic in the Out-Patient department because of arthritis, was referred to gynecology and sent to hospital for diagnostic D. and C.

Phys.—Heart and lungs normal. Abdomen negative. Pelvic: external genitals negative, old laceration of perineum; anterior colpocele; cervix points down and anterior, feels soft and boggy, old tear on right. Uterus enlarged and retroverted. Small fibroid or cystic ovary palpable in cul-de-sac. Speculum examination: Cervix bleeds easily on touch; very red and eroded. Diagnosis: Fibromyomata uteri. Possible Ca. of cervix.

Laboratory: Urine negative. Hbg. 75; R. B. C. 4,010,000; W. B. C. 12,600; P.M.N. 65. Wassermann negative.

Course in Hospital: A biopsy of cervix and a diagnostic D. and C. done on September 25. Very little tissue obtained from latter. Pathological report: 1. Atrophic endometrium; 2. Endocervicitis with erosion. Patient was temperature free for five days and on October 3 a complete hysterectomy was done. The ovaries were excised but tubes not removed. The tubes were very adherent in their respective cul-de-sacs and were about three times their normal size, with very thin walls. Pathological diagnosis: Fibromyomas of the uterus.

Post-operative course: Patient had an elevated temperature for ten days. On the 10th day, abdominal wound was found to be entirely broken open and omentum and bowel exposed. A secondary closure was done immediately. Post-operative course from this time on was uneventful and patient was discharged November 8, 1929.

The third case is that of E. R., white female, aged 31, single. Admitted to Minneapolis General Hospital November 1, 1929.

P. C.—Vaginal bleeding. Pain in right lower quadrant.

P. H.—Mumps, pneumonia twice; epilepsy since six years of age; appendectomy at 16 years, operation at private hospital in January, 1929. D and C. was done and a small fibroid was excised from uterus by laparotomy. (No pathological diagnosis made.) Patient was transferred to General Hospital from private hospital on February 2, 1929, and was here until March 19, 1929. Pelvic examination: probably right chronic salpingo-öophoritis. Discharge diagnosis: Epilepsy. Psychopathic personality.

C.T.A. established at 11, 28-day type, severe lower abdominal pain just before and during period for several years; slight bearing down pains between periods for past two years. L.M.P. August 8, 1929.

P. I.—Five days after last menstrual period patient began to have vaginal bleeding which has been continuous, amount varies from spotting to moderate flow. She has had intermittent pain in the right lower quadrant for past three years. Pain is sometimes dull and continuous for hours, at other times comes in sharp, cramplike attacks.

Phys.—Heart and lungs normal. Pelvic: external genitals negative, moderate amount of bloody vaginal discharge, cervix points down and back, is not freely movable; corpus anteflexed, normal size, firm. Right adnexa negative. Left: near uterus in region of lower segment is a tumor mass, size of golf-ball, fixed in position. Diagnosis: Metrorrhagia due to possible chronic pelvic inflammatory disease, ovarian tumor or malignancy.

Laboratory—Urine negative. Hgb. 85; R. B. C. 4,220,000; W. B. C. 7,000; P.M.N. 76; Wassermann negative. Smears negative.

Course in hospital: A diagnostic D. and C. was done 11/4/29. A small amount of what appeared to be normal mucosa but rather more abundant than the amount usually obtained, was curetted from anterior uterine walls. Pathological report: adenocarcinoma of body of uterus. On November 11, 1929, a complete hysterectomy was done. Externally the uterus, tubes and ovaries appeared normal. On the anterior surface of the cavity of the uterus close to the fundus was a slightly elevated soft reddish lesion 1.5 cm. in diameter. Pathological report: adenocarcinoma of body of uterus. Post-operative course uneventful.

These cases are brought before us for the purpose of forming a nucleus for the discussion of the everyday problem of making the choice between a total and a subtotal hysterectomy.

Many men advise total hysterectomy in every case. Their contention is that, in the hands of expert operators, the mortality is not higher than in subtotal hysterectomy; that this procedure results in as strong a vault as subtotal hysterectomy and that it negatives the possibility of a subsequent malignant process developing in the remaining cervix, or the possibility of subsequent cervical discharge, eventually necessitating interference from below.

Our experience and a review of the literature substantiates this attitude from the standpoint of mortality statistics. However, we feel that the potential dangers from total hysterectomy are greater than those from subtotal and, therefore, in selected cases, we choose the subtotal course for the following reasons: it opens up fewer channels for infection; it is less likely to disfigure the vault of the vagina with the consequent interference, however slight, with intercourse; and, it is less likely to result in subsequent vaginitis. We choose subtotal hysterectomy only when no malignant pathology can be demonstrated in the body of the uterus and when no benign pathology, such as small fibroids,

cysts, lacerations, erosions, and endocervicitis, can be demonstrated in the cervix. Benign pathology is stressed because in the presence of malignant pathology statistics point to the advisability of the use of radium rather than hysterectomy. When malignant pathology can be demonstrated by curettage a complete hysterectomy should be performed, no matter how normal the cervix may be. This is a very important point and should ever be kept in mind in doing a subtotal hysterectomy. It should direct every operator to open every amputated corpus to be sure that the endometrium shows no malignancy, in spite of negative curettings.

Allow me to bring out mistakes that have been outstanding in our histories and findings:

1. Failure to investigate irregularities in uterine bleeding, by curettage, before instituting medicinal treatment, thus resulting in failure to detect cancer in its incipency.
2. Failure to subject curettings to microscopic examinations, depending only upon the gross evidence of findings.
3. Failure, in subtotal hysterectomy, to open the corpus and carefully examine the endometrium for cancer so that the cervix may be removed if cancer has been missed by curettage.
4. Failure to repeat a curettage if bleeding does not cease under treatment.
5. Failure to make careful biopsies of the cervix in all suspicious cases.

In order to make total hysterectomy as safe as subtotal, two conditions must be fulfilled, namely:

Great care in the pre-operative preparation of the vagina, cervix, and uterine cavity just prior to operation, and

The operator must be so adept that the time of operation need not be prolonged.

Discussion: In answer to Dr. Sadler's question as to whether we were criticizing the surgeon for missing a carcinoma in a curettage, I would say that such was far from our intention. We criticized a diagnosis based entirely on a gross examination of curettings. Every specimen should be examined microscopically. In point of fact, a curettage will miss approximately one in every ten carcinomata. If you will examine carefully every corpus excised after curettage, you will be surprised to see how much of the endometrium you have missed. This applies to every one.

In answer to Dr. Benjamin's question, I do not believe in vaginal hysterectomy, personally, especially in cases where cancer of the body is found or suspected. Well do I remember a small carcinomatous corpus, with no other demonstrable pelvic pathology, that I finally decided to operate on by the abdominal route, why I do not know, because it seemed an ideal case for a vaginal hysterectomy. When I got in the abdomen I found a loop of bowel attached to the fundus by a carcinomatous process. The abdominal route much increased my chances of success.

It is well that Dr. Litzenberg emphasized the routine diagnostic curettage before all hysterectomies for fibroids. The statistical conjunction of fibroids and cancer is two per cent.

MODERN MEDICINE*

BY JOHN E. DUNN, M.D.

GROTON, SOUTH DAKOTA

The term "clinicism," implying bedside study, plus specific and rational therapy, appears pertinent to the larger group of medical men, as the words "laboratory technician" may be descriptive of the equally important coterie. The prefix "progressive" is both suggestive and relevant to the present status of medicine, seeming to entail a qualified addition to the term "physician" or "doctor."

"Physician" is used and may be pertinent to the elect of nondescript schools of philosophy,

cult or pseudoscience, while the parallel abuse of "doctor" has become a travesty upon scholastic attainment.

While progressive medicine has jeopardized the very existence of the so-called "family physician," so may it eventually circumscribe the activities of the pseudo variety.

Research has accomplished much for the advancement of civilization, entailing a revision of the social sciences, in order to co-ordinate material and social progress, hence the tacit compliment of Class A (A.M.A.) medical colleges to the basic sciences and necessary demand for

*President's address presented before the Aberdeen District Medical Society.

more and better training prior to matriculation in medicine.

"What price" progress should natural or laboratory science advance, if, on the other hand, social or clinical science remains static?

Clinical medicine requires instruction more politic than dogmatic, for it no longer suffices to have clinical precept for therapy without reliable laboratory data; on the other hand laboratory findings are not conclusive without clinical confirmation. Experience leads to conservatism, hence human progress, while constantly assailed on one side by extreme radicalism, is on the other held in check by extreme conservatism.

An X-ray may exhibit positive evidence of gall-stones, yet in the absence of clinical symptoms, a major operation may not be warranted. Positive Wassermann reaction with clinical confirmation of syphilis does not arbitrarily prescribe arsenicals without first excluding the possibility of aortic involvement. Therapy based upon both clinical and laboratory findings must at times suffer modification by the factors of idiocyncrasy, psychological and physiological reaction.

From a nebulous birth through past centuries, medical progress has been mainly empirical, its development being more or less circumscribed by gross experimental, rather than analytical and research, methods.

The gradual displacement of empiricism by laboratory technic, and the institution of specific and rational therapy, have, of necessity, created demand for greater diagnostic facilities, leading to a decided change in the armamentarium of medical practitioners.

Hence, the so-called "family physician" suffered handicap and in smaller communities found a waning clientele. Much might be said, much might be written, about the passing of the medical pioneer or the family physician, yet though progress has overtaken both, the pioneer still lives and prospers through the adoption of modern methods, and the medic must govern himself accordingly.

In the light of historical data the relegation of the family physician to obscurity may be premature, if not fallacious, for the human factor, that element of personal confidence between patient and clinician, cannot lightly be put aside.

Clinicians, laboratory technicians—humanity needs both, for what art is to science, science is to art. So exists an interdependence of these two great factors in medical progress.

Medicine requires both art and science, for

what this great combination has done for armies, human longevity, and human economy, so may it yet accomplish greater achievement, by raising the mind of man above the possible influence of the charlatan, and the exploiter who preys and fattens upon the all too little competence of the sick and needy.

MISCELLANY

THE WHITE HOUSE CONFERENCE FOR CHILD WELFARE AND PROTECTION

Neither the professional nor the public press seems to be giving due publicity to The White House Conference for Child Welfare and Protection. Perhaps, in the case of the medical journal, this is to be accounted for by the fact that the Conference is dubbed with a rather unfortunate name,—one which suggests a social objective rather than a health purpose. Had the staff of these journals, however, looked beneath the mere surface suggestion of the title of the Conference they should have discovered very quickly, from the complexion of the committees so far appointed, that child health, in all its phases, is the real meaning of the movement; that it proposes a range of study, a gathering of a wealth of information, the building of a basis of recommendations for the development of young life and the general betterment of the child which bespeak a broader vision in this field than the engineering President of the United States might be credited with. It has taken time to fully unfold the enlarging purpose of President Hoover in this remarkable plan by which he is undoubtedly intrigued.

The selection of the committees for the study of the several proposed sub-divisions of the Conference has proceeded slowly and doubtless with much care. Those who are most interested have been a bit impatient of its tardy progress and their interest has perhaps, in a degree, cooled. Those, nevertheless, who have been able to measure the scope of the undertaking see in it a project far exceeding any child welfare movement of the past.

Mr. Hoover's appreciation of its possibilities is evidenced by his choice of Dr. Ray Lyman Wilbur, Secretary of the Department of Interior, formerly President of Leland Stanford University, a close student of men, an educator of remarkable breadth, an interpreter of the medical and public health knowledge of to-day, as Chairman of the White House Conference as a whole.

The initial appointment of a Planning Committee, upon which were placed the official heads of public and private organizations of recognized standing, was but the building of a skeletal frame-work within which the structural materials and the real working force of the Conference could be chosen and assembled. This group is not expected, we understand, with some outstanding exceptions among its personnel, to do the actual investigative work.

There is satisfaction in finding among these, the planners: Dr. Harry E. Barnard, of Washington, as

Director of the Conference; Miss Grace Abbott, Chief of the United States Children's Bureau, as Secretary of the Conference; Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service; Dr. S. J. Crumbine, Director of the American Child Health Association; Dr. Lee K. Frankel of the Metropolitan Life Insurance Company; Dr. Samuel McHamill of Philadelphia; Dr. Wm. F. King of Indianapolis; and Dr. William F. Snow of New York.

It is understood that some five or six hundred committee men and women will be named for the regular service of the Conference. The preliminary announcement of only one or two groups already chosen has been received. It is stated that the Administration requests publication of these appointments only upon their official release. Such a request forbids the forecast of individual selections, rumor of which inevitably finds its way through other than administrative sources.

The Conference has been divided into general sections and sub-sections, as follows:

SECTION CHAIRMEN

Section I.

Growth and Development, Kenneth D. Blackfan, M. D., Boston, Mass.

Section II.

Medical Service and Public Health Administration, Hugh S. Cumming, Surg. Col., Washington, D. C., Samuel McHamill, M.D., Philadelphia, Pa.

A. Public Health Organization, E. L. Bishop, M. D., Nashville, Tenn.

B. Communicable Disease Control, George H. Bigelow, M.D., Boston, Mass.

C. Milk Production and Control, H. A. Whittaker, C.E., Minneapolis, Minn.

D. Prenatal and Maternal Care, Fred L. Adair, M.D., Chicago, Ill.

E. Medical Service for Children, Philip Van Ingen, M.D., New York City.

Section III.

Education and Training, F. J. Kelly, Ph.D., Moscow, Idaho.

A. The Family and Parent Education, Louise Stanley, Ph.D., Washington, D. C.

B. The Preschool Child, John E. Anderson, Ph.D., Minneapolis, Minn.

C. The School Child, Thomas D. Wood, M.D., New York City.

D. Vocation Guidance and Child Labor, Anne S. Davis, Chicago, Ill.

E. Recreation and Physical Education, Henry Breckenridge, New York City.

F. Special Classes, Chas. S. Berry, Ph.D., Ann Arbor, Mich.

Section IV.

The Handicapped: Prevention; Maintenance; Protection, C. C. Carstens, New York City.

A. State and Local Organizations for the Handicapped, Mrs. Kate Burr Johnson, Raleigh, N. C.

B. Physically and Mentally Handicapped, William J. Ellis, Trenton, N. J.

C-1. Socially Handicapped—Dependency, Homer Folks, New York City.

C-2. Socially Handicapped—Delinquency, Frederick P. Cabot, Boston, Mass.

Modifications of these sectional divisions may be expected as the plan further develops. Minnesota men will be noted among their chairmen.

The promise of the ripe fruitage of the Conference lies in the broad field from which its workers are being drawn. We find among them public health workers, physicians, general and medical educators, social service experts, institutional directors, juvenile court officers, criminologists, government administrators, sociologists, psychologists, physical, recreational and athletic directors, etc.

While there is evident a broad residential selection of the appointees covering twenty-one States of the Union, there is, many will think, an undue preponderance of choice from certain centers of large population but not necessarily of large expert leadership.

The massing of committee members resident in some such metropolitan centers as New York makes for convenience of attendance upon Committee meetings, but it does not therefore stand for the highest ends of child study. Some of the most valuable work of the present day in this field is being done in the west, as well as in the east, in the south, as well as in the north.

To find sixty appointments from New York City, as compared with sixteen from Washington, D. C., ten from Chicago; seven from Philadelphia and Boston, respectively; three from Newark (N. J.); Minneapolis and Los Angeles, respectively; two from each of four cities, and one each from thirty-nine other cities opens the matter to serious question.

A principal committee group already chosen is officially announced as assigned to the investigation, under Section Four of the Conference Program, to The Study of the Handicapped. The appointment of C. C. Carstens of New York, Director of the Child Welfare League of America, as Chairman of this large Section, is one of outstanding merit and guarantees the high quality of the service it will render to the country.

Reference to the above sub-divisions of Section Four into the four several groups will suggest a convenient classification of the studies it demands, as well as the fortunate directorship of each of these sub-divisions. Some ninety committee members have been appointed under these four sections.

The second principal group of Conference members, announcement of which has been released from Washington, is assigned to the Committee on Recreation and Physical Education. There are some fifty appointees in this group. It is headed by a notable American, Colonel Henry Breckenridge, of New York, formerly Assistant Secretary of War, and President of the National Amateur Athletic Federation and also of the Amateur Fencers' League of America.

Lists of these assignments can be secured by readers of THE JOURNAL-LANCET upon application to the Executive Secretary of the Hennepin County Public Health Association, 324 Citizens' Aid Building. THE JOURNAL-LANCET has generously offered its columns to further developments in the work of the White House Conference for Child Welfare and Protection.

RICHARD OLDING BEARD, M.D.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations
The Hennepin County Medical Society
The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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"LUCUBRATE!"

This word was presented to the editor unexpectedly and he wondered if our readers would not be interested in knowing that it is rather an important word, at least in the editor's conception. *Composition, authorship, lucubration*, all words having a similar meaning, but the real meaning of this special word is "to work by artificial light, hence, to burn the midnight oil." We are all compelled to do more or less of that in the writing game, and for that reason if you will interpret this single word you will find it has a hidden meaning. It means that the editor of THE JOURNAL-LANCET would like to find some medical man who is willing to write an occasional editorial to help him out. He would like to have someone interested enough to send in an occasional article dealing with some case he has had under observation. And even if our readers think they are unable to do it, we suggest that an attempt be made to write up some of their medical experiences.

One man wrote the editor that he did not feel equal to the task of writing editorials, and we think most of the men feel the same about contributing articles to a medical journal. The men in the country have scores of cases that are peculiar and difficult, and yet they somehow work them out and make as good a diagnosis as their confreres in the city. We are thinking now, par-

ticularly, of a man who has promised to write an articles on "Lipemia" for THE JOURNAL-LANCET, but has been so busy with his practice that he hasn't gotten around to it yet. It really means that he hasn't arranged his practice so that he can spare a few minutes to dictate what he knows about the subject. When it comes out it will be a very interesting article, we are sure, and we are anxious to have it for presentation to our readers.

The editor hopes the readers of THE JOURNAL-LANCET will get busy and send some articles in for publication that will make their medical brothers sit up and think; but we are apt to procrastinate as we go along, and the older we grow the less we want to think. In spite of all this we urge you to do your bit, so get busy and "lucubrate!" Write something with a snap to it. Any man can do that if he will.

AN EASY WAY TO MAKE MONEY—IF YOU ARE THAT SORT

On December seventh last, Belle Plaine, Minnesota, was invaded by some gentlemen of somewhat unsavory repute who robbed the bank there of six thousand dollars. A bank in a place the size of Belle Plaine is, of course, very small in comparison with the large banks in a large city, which have a surplus of millions, but they offer an opportunity to the bandit in that they are unprepared for such an attack or raid. The bank was not only raided, but the robbers on entering the main part of the bank overpowered the employees with guns, making them lie on the floor and locking three of them in the bank vault. No witnesses could be found who had seen the automobile in which they probably escaped. The county authorities ordered a chase which turned out, as most such chases do, with nothing recovered. Although the headlines in all the papers were blunt and outspoken in their denouncement of the robbery apparently no one thought much of it except the depositors.

Then, on the following week, the same gang of bandits, at least they are supposed to be the same, invaded Shakopee, another small but prosperous Minnesota town. This bank, however, was fully prepared for such an attack. Apparently someone had had a tip from some person or persons that such a robbery was set for that morning, consequently the chief of the detective bureau in charge of bank protection and his assistant were on the spot, and when the first effort was made by the robbers these men were ready and had organized their counter attack so well

that they killed one of the men, and two other robbers were so seriously injured they were easily captured and are now in Minneapolis in jail, and as soon as they recover from their gunshot wounds they will be tried for bank robbery. Of course, bank robbery is supposed to be paying business but in this instance the robbers got nothing except lead, which was distributed through their automobile until it was nearly cut in two, and they themselves were carrying a sufficient load of lead to end their activities for all time.

The only punishment for such acts is life imprisonment. At least in this way these bandits are prevented from repeating their attempts to get easy money in such a manner. It would seem almost incredible that robbers could go into a bank and rob it as they so frequently do, and there seems to be no remedy for it except such as was applied at Shakopee. In one instance the bank robbers went into a bank with their pistols in position and ordered everyone present to lie down, but somehow the employees of that particular bank were prepared for the attack for they dropped tear bombs and thus overcame the bandits by producing a cloud of smoke and gas through which the robbers could not see nor be seen. It may have caused inconvenience to a few patrons who were there, but they were undoubtedly glad to have the affair so disposed of. If that can be done in one place it can be done in another, and it seems to the writer that it should be possible to devise some arrangement by which such bombs could be released through foot manipulation, and in that way the employees of a bank might frustrate these attempts at bank robbery or annihilate the bandits. Something must be done very soon to discourage robberies, but we suppose if they succeed in killing off a sufficient number of bank robbers such crimes will stop because banks will be proof against such raids.

But what of the individual who takes up bank robbery as a profession? Ordinarily such individuals are but poor morons, as evidenced by the arrest of a man in Minneapolis the other day and the discovery that he had committed thirty-nine robberies and had hidden his stuff in an underground passage and there it all remained until ultimately someone followed him and learned the location of the loot. This man, on investigation, was found to have been insane some years ago and had been committed to a state hospital for the insane. Why could they not have kept him there, thus keeping him from becoming a menace to the community? Here is

the strongest argument for the examination of these morons, or insane people, and also a very strong suggestion that the criminal individual who is committed to a state hospital for the insane should not be permitted to retain his liberty no matter how well he seems. He has committed an offense against the state as well as flouted public opinion and proved himself a thief, a robber, and an individual unfitted to be at liberty. His mental composition is very loosely put together, and his type should be easily recognized as a defective individual. Then again it might not hurt the country if a few more defectives were obliterated. Of course, those who are under the care of the state are treated as human individuals and we have no fault to find with that; but they ought to be taken care of permanently.

Fortunately (or unfortunately) for the doctors there are few who have enough money laid aside so they need worry about robbers. They have devoted themselves to the care of the sick, and have not looked after themselves financially as they should have done, hence the effect of a robbery on them is trifling as compared with the average man who has money saved for an emergency. This reminds us of the man who was badly hurt and taken into a hospital, and when he arrived there he was treated by a surgeon and had all sorts of operations performed on him. When he got well enough to inquire into business he asked what the doctor's bill would be, and the doctor named a sum which was satisfactory to both; the injured man said the bill was all right and he had some money in the bank with which he could pay it, but he was saving that for an emergency.

A NON-MEDICAL LESSON IN INTERPRETATION

This little homily must not be taken too seriously, but it states the facts as they are, with or without money. And the *Fountain Inn Tribune*, in calling this "The Success of Bill Jones," had no intention of being personal, but we print it as it appeared originally and without basking in the reflected glory of the name.

"Bill Jones labored hard and shrewdly accumulated properties worth a million dollars, and died.

"At once he stood before the gates of the Eternal City and was greeted by the keeper.

"'Glad to see you, Bill,' the celestial doorman said. 'What luck did you have?'

“Fair,” said Bill modestly. ‘I managed to accumulate properties worth a million. Not so good as some of the big fellows, but better than most.’

“Are you trying to be funny?” asked the keeper, ‘or did you misunderstand my question? I wish to know how successful you were.’

“That’s what I’m telling you,” said Bill with some heat. ‘I was worth a cool million when I passed out—had that much in good paying property.’

“The keeper eyed him coldly and gave a short, unpleasant laugh.

“So you ‘accumulated’ a few stones and bits of metal and called a little of the earth’s surface your own! How very wonderful! If you will look down from here, your bit of property will resemble a fly speck on a mountain. And you spent your life earning the right to call that yours!’

“Bill fidgeted uneasily. ‘It looks pretty big down there,’ he murmured. ‘And I enjoyed knowing it was mine.’

“Yours?” scoffed the keeper. ‘Why didn’t you bring it with you? You poor simp; it wasn’t yours except to use. That same bit of acreage has been ‘owned’ by a thousand generations of men, and now another claims it. You owned it like you owned the air you breathed; you used it for a moment, that was all. What I want to know is, did you achieve any success?’

“I don’t know what you mean,” Bill answered suddenly.

“You wouldn’t,” said the keeper. ‘When you began life, were you given a bit of property to improve and multiply?’

“Not a foot,” said Jones. ‘Not a cent. I began with nothing.’

“Well,” said the keeper, ‘you aren’t expected to make anything from nothing. You were expected to improve the property you were given.’”

This little story contains a great truth. It is well known that many men gather together a large amount of money because they like the job and they pay no attention to the consequences of their living with but a single aim. The average man who goes to his celestial reward will probably be greeted in the same manner as was Bill Jones. His money stays here. His estate remains in other hands for a time, then finally changes again. At any rate, the article struck our fancy and we are reprinting it regardless of the consequences.

NEWS ITEMS

Dr. N. Wells Stewart opened offices a short time ago at Mankato, Minn.

Dr. Tom A. Williams, late of Washington, D. C., has returned to Florida after spending a year in Europe.

Dr. H. C. Boysen, of Welcome, Minn., was painfully burned recently by flames coming from his furnace.

Dr. Wm. O. McLane and his wife, Dr. Evelan A. McLane, will open their offices in Sleepy Eye, Minn., this month.

The meeting of the Nebraska Section of the American College of Surgeons will be held in Omaha, February 3 and 4, 1930.

Dr. and Mrs. G. L. Jacquot, of Marshall, Minn., have left for a two months trip, in which they will visit in the east and south.

The Huron Medical Society met recently at Huron, S. D. The program included talks by Dr. E. B. Taylor and Dr. J. C. Shirley.

The South Dakota Medical Association will meet in Sioux Falls, May 20, 21 and 22, 1930, according to a decision made at a recent meeting by the committee on local arrangements.

Dr. E. P. Smith, formerly of Lake Andes, is taking over the practice of Dr. J. J. Glasier, of Springfield, S. D. Dr. and Mrs. Glasier are leaving for California to spend the winter.

Charles Lowry Carman, a physician of St. Paul for more than thirty years, died recently at the age of 70. He was graduated from the University of Minnesota, School of Medicine, in 1897.

Dr. Glenn D. Gallup was found dead recently in his hotel room in Owatonna. Dr. Gallup was 48 years old, and had been graduated from the University of Minnesota Medical School in the class of 1904.

Dr. Eleanore M. Bohnsack, who has been practicing in Fargo since 1925 as a specialist in diseases of women and children, has left for Ambur, India, where she will be at the head of a missionary hospital for five years.

Dr. H. L. Huffington has opened offices in the National Citizens bank building in Mankato. The offices were formerly occupied by Dr. J. H.

James. Dr. Huffington is from St. Paul, where he has been connected with the Earl Clinic.

The last regular meeting of the Northwest District Medical Society was held at St. Josephs Hospital, Minot. Dinner was served by the Hospital at 6:15. Case reports were presented by Drs. Devine, Fardy, Gates, McCannel and Pierce.

Dr. H. W. Sherwood, Doland, S. D., is the new president of the Watertown District Medical Association. Other new officers elected were vice-president Dr. D. H. A. Tarbell, Watertown; secretary-treasurer, Dr. G. H. Richards, Watertown.

An interesting address was given by Dr. George F. Pitkin, of Hackensack, N. J., internationally known authority on spinal anesthesia and its use in major surgery, before the members of the Minneapolis Surgery Society at their recent meeting.

"A Stereopticon Skin Clinic" was the title of an address which Dr. Henry E. Michelson, professor of diseases of the skin at the University of Minnesota, gave at the meeting of the Sioux Falls, S. D., District Medical Society, held a short time ago.

The Grand Forks Medical Society at their recent meeting passed a resolution approving the principle of a plan for full-time health service in Grand Forks County. This resolution was made by Dr. J. D. Jungman, State Health Department Director.

Dr. Morris Fischbein, editor of the *Journal of the American Medical Association*, and author of numerous books, including "The Medical Follies," lectured on December 17, at the Spalding Hotel, Duluth, Minn., under the auspices of the Women's Club.

Dr. W. F. Braasch, of Rochester, Minn., has been named on the executive committee of the Medical Alumni Association of the University of Minnesota. Dr. N. O. Pearce, of Minneapolis, was elected president of the organization which plans to meet homecoming day every year.

Twenty-five years ago to-day Dr. John H. Rishmiller, of Minneapolis, joined the medical and surgical staff of the Soo-Line, then composed of 50 members. To-day he is chief of the surgical staff and head of the department of medicine and surgery composed of over 170 men.

The Mower County Medical Society held its annual meeting and dinner in Austin on December 5. The following officers were elected: President, Dr. John G. W. Havens, Austin; vice-president, Dr. P. A. Lommen, Austin; secretary, Dr. C. L. Sheedy, Austin; treasurer, Dr. A. E. Henslin, of LeRoy.

Dr. W. A. Jones, of Minneapolis, announces the termination of his association with Dr. O. Kittleson. Dr. N. J. Berkwitz will be associated with Dr. Jones. Dr. Berkwitz has been in the Department of Nervous and Mental Diseases of the University of Minnesota since 1925 as a teaching fellow and as an assistant, and he also was a resident physician at the Boston Psychopathic Hospital for six months. He has recently received a Doctor of Philosophy degree in nervous and mental diseases.

The fall meeting of the Fourth District Medical Society was held in Pierre, S. D., the evening of December 20, 1929. Following a dinner a business meeting was held in the library of the Pierre Clinic. Members present were: Dr. H. B. Martin, of Harrold; Dr. B. M. Hart, of Onida; Drs. T. F. Riggs, A. A. McLaurin, R. J. Morrissey, F. A. Northrup and C. E. Robbins, of Pierre. Guests were: Dr. L. N. Grosvenor, of Huron, President of the State Society, and Dr. Ben Massey, of Pierre. An informal talk was given by Dr. Grosvenor on his plans for the State Society for the coming year. Following this a series of X-ray plates were presented by Dr. A. A. McLaurin with an informal discussion of the same. Officers elected for the coming year were: President, Dr. T. F. Riggs; vice-president, Dr. R. J. Morrissey; secretary-treasurer, Dr. C. E. Robbins; delegate, Dr. B. M. Hart; councillor, Dr. A. A. McLaurin; censor, Dr. F. A. Northrup.

Cass County Medical Society of North Dakota San Haven Notes

The North Dakota State Tuberculosis Sanatorium has undergone extensive improvements during the past six months.

The Men's Masonic Cottage and the Women's Cottage, for apparently arrested cases, have been overhauled from foundations to roofs at an expense of \$5,000 while nearly as much more has been expended in improvements in the Administration Building, so as to give added accommodation to some ten employees besides furnishing about 250 feet of added floor space for the U. S. Post Office.

A New Nurses Home nearing completion at a

cost of \$30,000 will comfortably care for the present staff of twenty-six and at least half as many more when they are required by the institution.

A new two hundred horsepower engine has been installed in the power house, giving service to the increased demand called for by the new building mentioned.

CHAS. MACLACHLAN, M.D.
Secretary

Meeting of the Sixth District Medical Society of North Dakota

The last meeting for the year 1929 of the Sixth District Medical Society was held in Bismarck, N. D., December 17, 1929. Dinner was served at the Patterson Hotel to thirty-six members and three visitors. Immediately following the dinner the scientific program was taken up with Dr. C. W. Schoregge, acting chairman of the program committee, in charge. Dr. L. W. Larson of Bismarck, N. D., discussed "Undulant Fever" and gave a case report. Dr. V. J. LaRose discussed the clinical significance of "Hematuria" and gave several case reports. The regular business meeting was then taken up. Dr. H. M. Berg, of Bismarck, N. D., formerly of Jamestown, N. D., was received into membership by demit from the Stutsman County Medical Society.

A communication from the chairman of the program committee of the State Medical Society was read asking that any member who wished to present a paper at the next meeting report the same to the secretary, with the title of the paper, as soon as possible.

The following officers were elected for 1930: President, Dr. C. W. Schoregge, Bismarck, N. D.; vice president, Dr. O. T. Benson, Glen Ulin, N. D.; secretary-treasurer, Dr. W. L. Diven, Bismarck, N. D.; Censor to serve three year term, Dr. F. F. Vonnegut, Hague, N. D.; delegates to the State Medical Society, Dr. C. E. Stackhouse and Dr. H. A. Brandes, both of Bismarck, N. D.

W. L. DIVEN,
Secretary.

Yankton, S. D., District Medical Society

The annual meeting of the Yankton District Medical Society was held in Hotel Yankton, December 11, 1929. The meeting was called to order by Dr. H. Klima, President of the Society, after the dinner and the following business was transacted:

The minutes of the last meeting were read and approved.

Applications for membership by Drs. Geo. W. Stevens and D. B. Williams, new members of the staff at the State Hospital, were presented and they were by unanimous vote of the Society elected to membership.

The proposed amendment to Article III of our Constitution was read and by unanimous vote adopted as a part of the Constitution. The proposed amendment to create an associate membership was read and upon vote of the Society was laid upon the table until the spring meeting.

Upon vote of the Society the rules were suspended and the following officers were elected by acclamation for the ensuing year: President, Dr. G. R. Albertson,

Vermillion; vice president, Dr. F. A. Moore, Yankton; secretary-treasurer, Dr. J. A. Hohf; delegates to the State Convention, Drs. S. M. Hohf, Yankton, and H. Klima, Tyndall; alternates, Drs. G. R. Albertson, Vermillion, and F. A. Moore, Yankton.

Dr. G. S. Adams' term of office on the Board of Censors expiring, he was re-elected to the position. The Board now consists of the following members: Drs. F. A. Moore, F. C. Smith, G. S. Adams.

The scientific program was then presented. The first number entitled "Fracture" illustrated with lantern slides by Dr. Guy E. VanDemark, of Sioux Falls. This was a fairly complete and instructive discussion upon the general subject of fracture. The next was "Hematuria" by Dr. Edwin L. Perkins, of Sioux Falls. This paper was a thorough presentation of the subject in all its details.

Dr. L. N. Grosvenor, President of the State Association, one of the guests at the meeting, was called upon and he gave a short talk upon his observations of the various district societies which he had visited and touched briefly upon the work of the State Association in the future.

Dr. J. F. D. Cook, Secretary of the State Association, was also a guest and responded with a few remarks, urging especially that the delegates to the and touched briefly upon the work of the State Association.

Owing to inclement weather and the rather slippery condition of the roads, the attendance was rather small. There were about twenty at the dinner.

Following the dinner about forty senior medical students of Vermillion came for the scientific program.

J. A. HOHF, M.D.
Secretary.

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A good unopposed practice wanted in either North or South Dakota. Address 676, care of this office.

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Exercising machine never been used will be sold for half of list price. Address 669, care of this office.

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Tice's Loose Leaf Medicine in ten volumes and four volumes of abstracts. Address 666, care of this office.

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Resident physician wanted for Eitel Hospital, Minneapolis. Salary and maintenance. Write or call Dr. H. E. Stosel, Supt., Eitel Hospital, Minneapolis.

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McCaskey filing cabinet, and two McCaskey desks all in splendid condition. Can buy the filing cabinet or either desk for one third of list price on cash terms. Call Geneva 3208 between two and five p. m., in Minneapolis, or address 678, care of this office.

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Two fine Office Rooms with a combination waiting room in the best corner location in town. Building exclusively occupied by doctors for over ten years. Offices are steam heated. Hot and cold water and janitor service. Fine opportunity for a new graduate. Address N. Greengard, Mandan North Dakota.

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THE GOITER PROBLEM AND THEODOR KOCHER, AN HISTORICAL STUDY*

By HERMAN A. H. BOUMAN, M.D.

MINNEAPOLIS, MINNESOTA

The persistent student tracking the thought-paths of the lonely leaders of the past adds wisely to his stores, but the essential advantage accrues to his personality. He takes himself less seriously, growing friendly with humility, the open door to real understanding. Up to the seventeenth century no other organ afforded students so little difficulty as did the thyroid gland, a remarkable situation, when it is considered that Rufus of Ephesus and Galen had recorded accurate observations upon the thymus and the spleen. The dominant reason for it was the continued and enforced neglect of human dissections. Salerno, the school which first taught "healing by prime intention," was urged to dissect by its patron and law-giver, Frederick of Hohenstaufen, about 1231. It was only a short time that human dissections were done, however, and soon the old order of things prevailed. The work of Morgagni "de sedibus et causis morborum per anatomem indicatis," appearing in print in 1761, is therefore of the greatest magnitude, far reaching with its influence, even, to our days. Insisting on autopsies after every death, and bringing clinical and anatomical findings into direct relation, he found ardent followers. The great deliverer had lifted the curtain, and a new era dawned. Demands for enlightenment and expectation were in the air.

Immediate and original learning from nature was made the basis for action to gain experience.

In France, by this time, a period of intense clinical activity had set in. It had not ceased during the wild days of the revolution nor had prosperity and opportunity of the days of Napoleon impeded its rapidly increasing scope. Desault, Bichat and Corvisart were outstanding pioneers. Their students, Dupuytren, Bretonneau, Laennec, Louis and many others, still occupy important space in our text books.

The genius of Germany was set afire by calamity and depression throughout the land. In philosophy, music and literature giants arose succeeding in time to stimulate the entire nation. There followed an attitude of respect and appreciation of intellectual activity and accomplishment. To thousands of hearers Dr. Fichte preached work and organization, a great share of which came in for the study of the natural sciences. The indefatigable industry of the German-speaking clinical teachers, (quoting Halsted,) and their absolute devotion to their work, the devotion springing from innermost convictions, helped materially to place surgery upon a truly scientific basis. Men who had no higher aims than their own advancement were not called to occupy a chair of surgery, a position of great distinction.

The duality of the French and German

*Read before the Minnesota Academy of Medicine, November 13, 1929.

worlds, so apparent, is much less pronounced in the mind of the Swiss. He can bring their turbulent currents of thought into harmony within himself and give them form and direction, unhindered by the difference of language and mental attitude. It cannot be denied, therefore, that the student, Theodor Kocher, had great advantages from the start. However, he made good use of them. With his nobility of character, his artistic talents, with his enormous capacity for work, his passion for the truth of things, with his wonderful judgment, ever growing and self-controlled by constant and sustained study and restudy of patients and results, he slowly and solidly grew to be the colossal figure, beheld by his pupils and followers in the wide world with overpowering admiration. Just such a man was needed to unfold the thyroid question, and it is principally due to Professor Kocher that the thyroid gland occupies a central position in the evolution of modern medicine and surgery. That this gland was the origin of goiter had been discovered by Fabricius of Aquapendente about 1613, reviving the old Greek knowledge that the goiter and the adenites of the neck were distinct entities. About 1656 Wharton had given the name *Throidea* from its shape, but had made no further contribution. The large degenerating goiters and in their wake the cretin situation had been brought forward more or less sporadically since antiquity. Among the later writers Paracelsus, Felix Plater and the great Haller, must be mentioned, all of them Swiss. During the 5th, 6th, and 7th decades of the 19th century several states had become alarmed. Commissions had been appointed in various regions of Europe to study the question. In France, Baillarger (*Enquete sur le goitre et le crétinisme*) had shown that there existed an intimate relationship between endemic goiter and cretinism, a long time after Claude Bernard had studied the effects of the slow withdrawal of oxygen in animals. In England, Sir Wm. Gull had called attention to peculiar idiopathic conditions of adults (named by Ord, *Myxoedema*, 1878) and here also a commission had been busy finding causes. The association with endemic goiter had been noticed by most all of them, but that the loss of the thyroid function should have been the sole reason had remained hidden. Owing to its apparent vascular luxury, the gland had been looked upon as a mechanical regulator of the cerebral circulation. Ruysch, about 1700, had declared for an internal secretion, but the first real light had come from Schiff, 1856. He had proved that the thyroid was essential to life

in dogs, as its forfeiture meant death, and, furthermore, he had prolonged the life of thyroidectomized animals by reimplantation of parts of the gland. Goiter was generally accepted as an unalterable affliction. This pious belief was rudely shaken by the discovery of iodine by Courtois, Fife and Straub. Coindet had announced a cure with his solution (KI 0.25 I 0,7 water 40). The news had spread widely and had been accepted with more fervor than caution. Lugol had published his formula (KI 10. I. 5. water 100) for the cure of scrofula. Prevost, 1849, had advanced, as the cause of goiter, the deficiency of iodine. He had been supported by the great chemist Chatin, who had determined the iodine content of air, water and soil of the goiter free and infested regions. There had been a law passed for some of the mountainous departments of France (in force 1855-1870) providing for compulsory administrations of iodine to prevent goiter. The astute clinicians had not found the relief promised an unmixed success. There had arisen a great deal of discussion of peculiar symptoms.

Flajani, 1741-1808, and Parry, 1756-1822, calling attention to *Exophthalmos*, *Tachycardia* and *Goiter*, had been voices in the desert. At a later period, however, Graves, 1834, and Basedow, 1840, had found more responsive hearers and students. Roeser, a country physician, of Württemberg, (first paper 1844), had made clear the difference between acute and chronic iodism, gastritis, sore throat, conjunctivitis, etc., of the acute, disappearing promptly on withdrawal of iodine; the chronic, *cachexia iodica*, had been observed in some cases, when a goiter, following iodine treatment, had been reduced. The patients had shown loss of flesh and strength with increased appetite and frequency of pulse and great depression. The historical horror *iodi* was thus established. Roeser, however, had seen similar cases in which iodine had not been a factor. Rillier had continued the discussion of constitutional iodism. As chairman of an investigating committee, he had read an extensive report before the *Académie Française*, 1860, relating to the pros and cons of iodine administration, its use and abuse, and to some regional idiosyncrasies. Up to this time such terms as *thyreotoxicosis*, *hyper-* and *hypothyroidism* were not known. Injuries to the *neura-phonetica* of Galen, the recurrent nerves, and their consequences had been known since antiquity. Operative measures for the relief of goiter were undertaken most frequently because life was threatened by suffocation. The gross path-

ology of it, that is, its physical character, if it were soft, hard, cystic, vascular (aneurysmal) or malignant, the operator was obliged to take notice of, that he might choose the proper mode of attack. The surgery practiced throughout antiquity, transmitted by the Roman philosopher Celsus, 23 A. D., and later by Greek medical writers—Galen, 190, Oribasius, 360, Aëtius, 550, and Paul of Aegina, 640, had been carried by the immense wave of light arising during the incomparable period of Pericles, 464-431, passing by way of Plato, Aristotle, and Alexander, his pupil, and creating the school of Alexandria, 323 a.C. to 642 p.C. and then that of Salerno in Magna Græcia, which existed until 1811. Without a preconceived *modus procedendi* and with inaccurate anatomical premises, circumscribed goitrous nodes were shelled out, bleeding was arrested by ligating tissue. Cysts were incised, their contents evacuated and replaced with coagulating and caustic substances. The hot iron followed up with chemical escharotics was used in a general, indiscriminate way. Slowly, but surely the study of nature was abandoned, and the Greek stores were covered up and forgotten. Not until 1495 were the writings of Celsus rediscovered. In spite of the fine scars obtained by the antiseptic measures, practiced by Roger, 1190, and Rolandus, 1250, (who warns against the use of iodine in the vascular *botii*), goiters were destroyed by suppurative processes induced by seton, wick, hairseton, herb plasters, circumvection with a shoestring, and infra- and supracutaneous ligatures followed by caustics. Toward the end of the 18th century, thanks to courageous trail blazers, the hopeless and crude ways had come to compete with more heartening, new procedures. With clarified anatomical conceptions and a carefully planned technique, ligating the afferent vessels, Desault had accomplished a total, 1791, extirpation. J. A. Hedenus of Dresden had operated (1821) upon 6 patients with suffocating goiter successfully, and without a death. Methodical excision of goitrous nodes and methodical resection of lobes and parts of lobes had been evolved, but still the great majority moved with the advocates of the ancient practices. Progress was distressingly slow, since pain, infection, and hemorrhage continued to embitter surgical treatment. Thanks to Dr. Morton and others, pain had been routed. Immediately operative possibilities and experience advanced, but the death rate from sepsis continued appalling. Victor v. Bruns, 1851-1864, had 6 deaths from infection in 28 goiter operations. Billroth's mortality in Zuerich,

1860-1867, was so discouraging, that he almost abandoned goiter surgery while at Vienna until 1877. At a meeting of the medical society of Stuttgart a singular postoperative incident had been discussed. During the late summer of 1866 Dr. Paul Sick had performed a thyroidectomy to save a ten-year-old boy from suffocation. Six months afterward this boy's psychical behavior had changed. Formerly lively and quick, he had grown silent and dull. The opinion was expressed that the removal of the gland had caused a chemically altered blood which had failed to properly nourish the brain. The control of hemorrhage remained a vexing problem. Too many deaths from bleeding continued to give weight to the stand patters, so satisfied with their present and blind to the possibilities of future development. Said Luton, the originator of the Iodine injection treatment: "Il y a lieu de s'étonner qu'une opération aussi redoutable soit encore sérieusement conseillée de nos jours." Even Woelfler, the famous pupil of Billroth and an authority on goiter, had praised the styptic virtues of Baumfarren (*Penghavar djambi*) as late as 1874. Modern artery forceps were awaiting greater operative routine to come. For a Kocher the times were propitious indeed, enlightenment by faith and industry held to its victorious course. New worlds of thought were opened, discoveries came from all sides, and moreover, there were thousands of appreciative minds to receive them, eager and prepared to work. In the heavens of medicine and surgery three stars were shining brightly, Pasteur, Lister and Robert Koch, standing in the midst of their activity.

After having completed his medical studies with *summa cum laude* Kocher went abroad, visiting Billroth, Langenbeck, Lister, Spencer Wells, Nélaton, Verneuil, and Pasteur. They inspired him and decided for him his future course. He foresaw the approach of modern surgery, in the realization of which he was to play a most important rôle. He returned and became assistant to Luecke, the director of the surgical clinic of Berne, his home town, in 1866. His chief had the lowest death rate in thyroid surgery and he was widely known for his great clinical judgment and for his painstaking and conservative methods in handling his cases. A thorough clearing up of each case was the rule. Treatment without an accurate diagnosis was as impossible as an operation that had not been carefully planned. Kocher's first important contribution was his method of reducing the dislocations of the shoulder joint, now practiced

everywhere. A study of the physiopathological processes underlying hemostasis was undertaken to explain the many postoperative hemorrhages he witnessed. In 1871 he published a paper on the management of wounds after Lister, which was so readily accepted by the German-speaking surgeons. Kocher was the foremost among them to eliminate the unnecessary features of Listerism, replacing antisepsis with asepsis. In the spring of 1872 Luecke accepted a call from Strassburg and in preference to many noted applicants, Kocher was chosen his successor. The selection of a young man of 31 by regents who impeded the growth of the Bernese clinic for years by their penurious behavior, for such an important position, serves us like a flash of lightning, illuminating his personality. All of his contributions are laid down in a clear and simple manner in his *Operations Lehre*. This book presents the experience with his own method and technic in general surgery. Most of his operative methods described are either entirely new or are decided improvements personally made and tested, which have become as the daily bread to many surgeons throughout the world. His work upon the thyroid and its diseases, however, has brought the greatest blessings to his people; goiter was their calamity, and it beckoned to him every day and made him the universally known master surgeon. On the hill of our day we grow bewildered and worshipful, seeing this man singlehanded start on his way into the almost unknown realm of the thyroid. He advances cautiously, like a true pioneer, every inch of ground is studiously explored, nothing unusual escapes his inquiring mind. Sometimes he stops, retracing his steps again and again, alert that he may not miss his direction. And soon with practiced eye, his mind and body tried, he makes his own the foggy mysteries of ever greater circles and undaunted by discoveries and fame, he cannot leave his trail.

The famous treatment of goiter, with injections of iodine, had become general, uncontrolled and wild, and the results, discouraging and disastrous. The specific action of iodine had been dissipated, since it had been proved, that alcohol had the same effect, namely to incite an aseptic inflammation of the connective tissue, followed by scarring and shrinking. Fortified by his observations of the numerous autopsies, which he never failed to attend, and his pathological studies, Kocher protested vigorously. Only a few cases could respond favorably to such treatment, while many would be made worse. Op-

erative removal was necessary. Surgery, however, was proscribed, the dangers from uncontrollable hemorrhage and injured recurrent nerves were too evident, and the progressive evil of the goitrous disease was not understood. He set out, forthwith, to make clear the vascular apparatus of the thyroid. From the excellent lithographs we have of his drawings, it is evident that he did not overrate the importance of the numerous large veins. Beautiful injections with colored fluids were made of the superior and inferior thyroid arteries, to demonstrate the areas supplied within the larynx and trachea. The essential reason for the postoperative mucous catarrh and edema was thus established. It was only another step for him to dissipate the fears of bleeding by carefully tying the vessels, whose relations he had explored. The methodical ligation of the veins gave Kocher the great advantage to follow cleavage in a bloodless field, which of late has been so well depicted by Hertzler. Due credit was given to Woelfler for having revived the tying of the thyroid arteries as a preliminary measure to induce atrophy of the goiter, which was practiced by Porta about 1840. From the vascular scheme Kocher turned to the mechanical effect of goiter within the thoracic aperture upon the trachea. Artistic drawings were made from autopsy cases of various deformities and accurate measurements demonstrated definite constriction of the lumen. He has often seen narrowing of the trachea from thyreoptosis, when patients had not had any signs of dyspnea. The findings of these investigations pointed directly to a reduced oxygen intake, and Claude Bernard had shown that he could habituate an animal to a slow withdrawal of oxygen and retard its vital function, so that it became practically a coldblooded animal. Could a deficient development, atrophy or softening of the trachea cause the progressive anemia, a sequence of goiter and not a source, as Dupuytren had taught? Kocher held to the affirmative, and it was difficult for him to consider other factors for a long time. Frequent autopsies were emphysema, bronchiectasis, blood vessel change and dilatation of the heart and not infrequent, lesions of other vital organs. Struma was therefore not an indifferent local affliction, but of serious, progressive, of a far reaching nature, and it might easily cause sudden death. Surgeons had made extirpations, whole or in part, without regard to the systemic value of the gland, of which the physiologists knew little or nothing. The oper-

ative indications of his first 13 cases, from May 30, 1872, to March 3, 1874, were, dyspnea in 6, rapid growth in 5, and inflammation of huge goiters in 2 cases. His *modus procedendi* was not different from that of Patrick Watson, Billroth, and Greene. Approach through median incision, working out the struma step by step, tying bleeding vessels as they presented. The fascial structures at the bottom of the cavity were caught up with sutures and fastened to the edge of the skin. The wounds were left open and dressed. Two patients died from sepsis.—With case 9, Marie Birchsel, he struck a lead. She was 11 years old, had a large rapidly growing goiter. Medical treatment, including injections, had failed when she came to be operated upon, August 1, 1874. She had recovered promptly from a total excision but the family physician had reported, that after a few weeks of good health, the child had changed remarkably, formerly active and quick, she had become sullen, dull, and lazy.—Like Billroth, Kocher experienced a lull, only 5 cases were operated on from March 3, 1874, until July 21, 1877, when the case of J. Kropf was operated upon, a youth of 17. A so-called total excision of his goitrous gland had been done. The recovery had been uneventful and he had enjoyed good health, until during 1881, he developed a recurrent struma, and then growing progressively anemic, slowly passed into a cretinoid state. Careful physical examinations made tracheal defect certain, and Kocher was more than ever convinced, that the boy's condition was due to an inadequate supply of oxygen. That the deficiency of secretion and of iodine begins with the goitrous degeneration, but does not condition it, came to be known much later.—Regular, open wound, gave way to strict antiseptic management of Lister from case 19, October 20, 1877, which showed slight tetany during recovery. Case 23 died of sepsis with primary healing of the skin. The catgut was found swarming with germs, though it had come out of a bottle of carbolyzed oil. There followed intensive investigations of practical methods of preparation and preservation of catgut, but Kocher began to use silk more and more from this time. He changed from carbolic acid to zinc chloride (0.02 per cent) as antiseptic with case 37.—Following the successful total extirpation of case 44, March 25, 1881, he got the message: "Your operation was a success, the evil of the neck is gone. However, she has not had a good hour since. She complains constantly of freezing and her limbs have no feel-

ings and her abdomen is swollen." With case 78 he turned from the zinc to bismuth (1 per cent) as antiseptic dressing. The Schraegschnitt, incision along one of the sternocleidus, was used from case 23, and that was abandoned for the Winkelschnitt, in February, 1882, with case 59. This incision was median up to the cricoid and from there oblique outward to one or the other of the sternocleido-mastoids. This manner of approach was maintained until cosmetic reasons induced him, to devise the famous collar incision. After having tried bichloride instead of bismuth in two or three cases, Kocher gave up the antiseptic régime, and adopted definitely the more simple and natural asepsis. He had furthermore abandoned dissecting down to the goiter tissue proper, and extirpating it from within its intrinsic capsule, a procedure which he had stressed as a paramount necessity for a long time. With the new technic developed, he proceeded along a plane external to the external capsule and only after he had ligated both thyroid arteries and delivered the tumor, did he split the external capsule. He tied the inferior thyroid artery at a point where it turns from its vertical to its horizontal course, mesially to the carotid. He was very careful to free the often friable vessel, to see it well, and to avoid the sympathetic. Kocher's death rate from cases 59 to 102 was 5, and he felt that he could reduce that much more and rob the operation of simple goiter, however large and difficult, of all danger, so that discussion of the inadvisability of surgery must cease. He was disturbed, however, by reports received from his total extirpations, and when Reverdin, in the fall of 1882, told him of similar experiences, he decided to get at the facts, and proceeded to call all of his cases he had operated upon for a careful re-examination. Of the total extirpations he was able to personally examine 18. Two had nodules left at the site of the thyroid and appeared to be in good health. Nothing of the gland could be found in the remaining 16 and all of them presented a more or less uniform syndrome of disturbance of their general health. It was progressive because the length of time elapsed since the operation increased the degree and extent of the change. All patients operated upon, within their periods of growth, were cretins, they were physically and mentally damaged. Those operated upon later in life presented normal physical development, but were intellectually deficient (idiocy). Soon after the patients had been discharged from the hospital, they had begun to complain of drawing aches and pains in

their arms and legs, followed by great weakness and fatigue (the neurotic stage of Horsley). Some time later they had become very sensitive to cold. In winter their extremities had been blue, swollen, and frostbitten, which had alarmed their families and friends. Teachers had noticed in their formerly bright children a marked decline in their mental activity, which they had failed to overcome, in spite of their best efforts. Mathematics had been the most difficult study to advance in, and they had grown very forgetful. They had often piteously appealed to their parents, why they should be different from other children. Most patients had been fully aware of their own predicament. They knew that they were slow thinking and moving, and in consequence grew abnormally silent and sullen. Slowly the swellings of the face, hands, and feet, intermittent at first, became permanent. The anemia, the swollen, transparent eyelids and the edematous facies had made them appear like advanced nephritics (the myxedematous state of Horsley). The skin had taken on a peculiar change, could only be lifted in thick folds, was infiltrated, dry and scaly, and the hair had fallen out. The heart beat (myxedematous) was weak and the pulse small; even menstruation was abnormal, and there were epileptic seizures. Skeletal growth (the cretinic change of Horsley) had slowed down markedly, while the head and abdomen were very large. The viscosity of the blood was pronounced, it clotted rapidly, and there was an increased white and a decreased red count (1-300). Nine years later Horsley wrote "the gas exchange in the blood is greatly altered and the proper oxygenation is greatly reduced." Kocher had thus definitely proved a relation of dependency between panthyroidectomy and cretinoid change; he called this condition "cachexia strumipriva," in contrast to the known cachexia iodica. Total extirpation could not be justified, and he abided by his own verdict as long as he lived, excepting when he was forced by malignancy. It was only another step, to see in the goitrous alteration a diminution of glandular function and the true relationship between goiter, cretinism and idiocy, a metabolic organ insufficient or lost followed by a progressive general degeneration. Goiter had nothing to do with cretinism so long as a sufficiency of secretory tissue was maintained, but aside from inflammation and malignancy, it had proved to be the most frequent and widely spread agency to destroy the active parenchyma of the thyroid. Such danger should be prevented by timely surgical interference.—This tremen-

dous truth, so comprehensively and convincingly presented, was received in the German world with indifference, and even with ridicule, until Reyerdin published his cases of *myxédème opératoire* based on Kocher's work, in recognition of which he was decorated with the officer's cross of the Legion.—The thyroid moved to the center of the stage. Its surgery had been developed and the workers turned to the consideration of its importance and usefulness in the economy. In England, through the efforts of Felix Semon, Kocher's work was received favorably, and in sequence the commission on myxedema ruled that atrophy of the thyroid was the most constant, indeed, the only constant, physiopathological finding, and moreover, myxedema and cachexia were essentially identical conditions. In return Kocher was enabled to make good use of Murray's extracts, to relieve his unfortunate patients. He had treated his cases of total thyroidectomy by transplanting parts of gland or of goiter, first practiced by Bircher in 1883, under the skin, in muscle, peritoneum, intestine and bone marrow, but the pieces failed to live, and the effect was temporary. All cases of real total extirpation in which thyroid tissue could not be found at autopsy, died within seven years, so the extracts were most welcome. When in 1887, he addressed the British medical association at Dublin, he changed the cachexia *strumipriva* to *thyreopriva*.

Tetany (*Corvisart*) had been such a frequent complication among Billroth's patients that Weiss, his assistant, undertook a thorough study of it. He ascribed the condition to the division of the numerous nerves about the thyroid in individuals predisposed to nervous affections. He found definite changes in the ganglion cells of the anterior horns, particularly of the 5th and 6th cervical roots. Though Sandstroem had discovered the parathyroids in 1880, Kocher continued to regard tetany as the acute form of his cachexia. Among all of his cases he had observed a few fleeting manifestations of it and only a single serious one, and that proved transitory. Why he should have no more, remains a mystery. His manner and method of operation, of which Kraske said that he could not tell how to perform it easier and safer, cannot be the only explanation. So tetany giving him so little trouble, he was influenced by his startling findings and naturally turned to the investigation of the cause of goiter. For a number of years he spent the summer aided by his students, Tavel among them, examining the people of the canton Berne. Thousands of school children

were scrutinized, cretins counted, and the deaf mutes differentiated, and the water supply thoroughly investigated and the various regions charted. He published a map demonstrating goiter distribution and geological formation, and in a public message he demanded, that the Government take steps to buy the known health springs and furnish all the people with a safe drinking water. Unboiled water contained in the infested regions the unknown organism (Rosenow) or the toxic products; so long as the people were affected by it, goiter would continue to increase, and cretinism might ensue. They must prevent goiter forthwith by boiling the water and adding a little iodine. It took more than 30 years before this statement of Kocher's was confirmed by Robert McGarrison who eradicated goiter within four years from the military school at Sanawar in Punjab by means of a controlled water supply, and that regardless of iodine content. (His previous work with vaccines is well known.)

Whereas in former papers Kocher had presented his deaths in two groups, of ordinary and malignant goiter, he made a departure in 1889, when he published 250 new cases, in adding Graves disease as a third group. He had 225 simple goiters with a mortality of 0.8 per cent, 20 malignant with 3 deaths, and 5 Basedow with 1. During a clinical lecture in 1887, he had shown a case of Graves disease to his students, demonstrating the excessive vascularization of the gland and suggesting that the symptoms were due to hyperfunction. Some time afterward he operated upon a genuine Basedow for the first time. Nine years later he had successfully operated upon 69 cases with 4 deaths. The necessity to improve the resistance of these patients and to retard the over-activity of their glands was very clear to this great clinician. He naturally ligated the arteries to induce atrophy, after rest and other quieting influences had been brought to bear, to get his cases up to parity. How grateful we must be for Henry Plummer's contribution, saving lives and time with his Lugol preparation, in addition to Kocher's directions. However, the principal matter discussed by Kocher is his method of surgical procedure. It was practiced when he reported the first 1000 in 1895 and it was stressed as most practical with 600 new cases in 1898, because among these there were 150 operated upon by his assistants. For instance, our Dr. Gustav Schwyzer among them with 20. The discussions upon indications of surgical procedure, perplexing, but based upon clinical observation, lengthy and repeated, yet

full of interest and information for the student of the present day, by this time have lost their polemic tone. The unconcerned fighter has come through to give clear and simple directions. Boiled drinking water and iodine are prophylactics. As a remedy in very small doses iodine is used with caution. It has to prove favorable action within three weeks; if not, surgery is indicated. Preliminary to operation careful blood examinations were made. Large colloid goiters received 2 gm. of thyroid extract. General anesthesia was avoided. The skin was prepared with soap and hot water, followed by alcohol 70 per cent. The famous collar incision was standard. He does not favor enucleation of Socin and has replaced it with enucleation-resection, since the fibrous envelope of the node is not regularly seen and the release of pressure by removal of one node may give rise to acceleration of growth of the numerous smaller and very small nodules present. He recognized the adenomata and their import as to recurrences of goiter, thus foreshadowing the work of Halsted and Goetsch (mitochondria). Kocher was partial to a one-sided operation in his anxiety to leave a sufficiency of normal gland. When Hotz of Basel operated in this manner, on both sides, he called his technic "the bilateral Kocher operation," which today is done most frequently everywhere. His "evidement," the scooping out of the soft material of an isolated node, Kocher practiced often in intrathoracic goiter, after tying all accessible vessels, especially the veins. Dr. Matty demonstrated, in a *Festschrift*, a few years ago, how great a pioneer Kocher was in this branch of goiter surgery. The drains were removed in 24 hours and the stitches in 48. From his private clinic he reported a series of 302 consecutive cases without a stitch abscess.

His training slowly and solidly acquired enabled him to complete his ever growing tasks methodically, day by day, and besides satisfy demands for addresses from famous associations and congresses, outside of his native country. The interest he had rekindled in the thyroid field had increased the volume of work in it enormously. It is indeed inspiring to see him seriously and with sympathy give full credit to and discuss the achievements of other men. In 1887 Munk had denied that the thyroid was of any considerable importance and that the total loss of it was fatal to dogs, basing his statements upon actual experiments. Wagner had demonstrated the enlargement of one lobe to occur, if that of the opposite side had been removed. Von Eiselsberg had modified this finding. When-

ever active metabolism was lowered for any reason, the animal neither growing nor increasing in weight, the hypertrophy would not happen, but when the animal was not old, normally developing at the time, the remaining thyroid tissue would hypertrophy to a degree parallel to the needs of the metabolism of the body. The classical work of Victor Horsley affirmed that the thyroid gland played a definite rôle in the economy. The acinous epithelium was a true secretory gland structure, influencing the metabolism of the blood and other tissue in consequence. The forfeiture of the gland would greatly alter the gas exchange in the blood, (Hofmeister, Herzen et al.) and abnormal substances would appear. The oxygen in the arterial blood might fall below the normal proportion in the veins (Herzen's anoxemia, the present-day oxygen inhalation during the crises). The behavior of the tissue responding by hypertrophy, when a part of the gland was lost. The regenerative power of the epithelium, forming from the blood the colloid material which found its way into the circulation. The intimate connection between the protoplasm of the cell and the colloid (Kohlrausch), the fact that a certain proportion of the gland was necessary for maintenance of health, and that its metabolic importance varied directly with the activity of the vital processes, proved abundantly, how truly Kocher had seen the indispensability of the thyroid. Horsley called special attention to the time necessary to carry out the work in this field. Munk's failure induced Halsted to prepare his masterly contribution of the minute anatomy of the hyperplasia, which he thought identical with hyperactivity. Increased blood supply and vessels, change and growth of epithelium, reciprocal alteration in size and contour of the follicles and the vanishing colloid, were the salient features. In the very marked hypertrophies the cells were so closely packed in a papillary fashion, that the follicular lumina presented mere stellate slits, (Langhans malignant proliferating goiter, 1907) so that the blood vessel arrangements were his only means of orientation. He showed the involution of these phenomena to ensue by atrophy of the blood vessels, shrinkage of the epithelium, return of normal follicles, and reformation of colloid. Halsted called special attention to the necessity of allowing sufficient time for the evolution of the processes described (Farrant: Reaction of thyroid to infections, 1914). Strangely, his histological contribution did not arouse so much interest as did his physiological dis-

covery that he could prevent hypertrophy by preliminary administration of iodine. It assisted in setting afoot another wave of iodine enthusiasm. Kocher discussed the work of van Norden, Stern, Pierre Marie and Moebius in the biochemical and hyperactive aspects of the thyroid. Eugene Gley had been doing important work along the same lines culminating in his great discovery—"of the cause of tetany." He had proved, that the loss of Landstroem's parathyroids would incite this syndrome, and his findings had been confirmed by Vassale and Generali a little later. Cr  d  , and later Garr  , Klose and others had brought forward the subject of interrelation and action of the endocrines. Magnus-Levy had published, 1896, his studies of gas exchange and metabolism in conditions of thyroid feeding, obesity, myxedema and Graves' disease, and had thus set going development of our present machines for the basal metabolic tests, which have become necessary apparatus in all our clinical laboratories. In relation we have the contributions of Harra and Branovacky of the de Quervian clinic. The former investigating the influence of iodine upon gas exchange, the latter demonstrating biological values of the different forms of goiter, both using the so-called "rat experiments."—Kocher published a paper on the action of iodine upon goiter in 1895. He outlined the history of iodine medication, and then suggested that the thyroid must contain iodine. He had induced his assistant, de Ligneris, to repeat the work of Halsted.—The different reactive and pathological states of the gland, as later formulated by Lanz, stood out clear now, the hyperemia, hyperplasia, disturbed secretory function, secondary structural alteration and degenerations, which in turn led to a better evaluation of goiters prevailing in other lands. Baumann's discovery of iodine in the thyroid substance, though incomplete, as he died in the midst of his work, using a small series of cases, and inaccurate, because of his crude means of detection, excited a great deal of interest. Not only was the iodine deficiency, as a cause of goiter again put forward, but it indicated the fact of an iodine economy in which the gland was the principal organ of maintenance. The work of Kendal, Blum, Strum, Veil and especially that of von Fellenberg has given us knowledge of its determination, amount available and quantity needed, its level in the blood and its rate of elimination. The daily systemic iodine needed is 50 gr.=0,000050 gms. Kocher could produce Basedow symptoms in thyroidless patients

by generously feeding with extract, but failed to do so by administering iodine. When he treated people, that had some thyroid left, even myxedematous, he saw hyperthyroid symptoms from large losses of iodine, as well as from extract. It was evident that iodine could excite hypersecretion of the gland. However, in cases with healthy thyroids and in some with colloid goiter, much iodine could be given without causing symptoms, and, furthermore, it had no effect upon degenerated tissue, no matter how well supplied with blood. The iodine was found to be almost exclusively stored in the colloid, so in any case the iodine content presented the expression of the ratio of colloid formation to colloid discharge. If the colloid formation should preponderate, the iodine content would be high and if the condition was reversed, the iodine content would be low. A very active gland might therefore hold little iodine. The goiter of adolescence, indicating increased demands upon the economy and decreased function of the gland, would relinquish its compensatory hyperplasia and again store secretion of high biological value, if its needs were supplied by administration of iodine. In our day workers like Oswald, Blum, Breitner, McClendon, Marine, Kimball have continued these investigations. The primary event in the strumous change was the deterioration of the secretory epithelium losing its iodine binding power, while the deficiency of iodine intake was secondary, which would explain the prevalence of goiter in regions where iodine is circulating in abundance. The mountain goiter had proved to be very sensitive to iodine medication, so that Kocher had learned to be very cautious with its use. The studies of Sahli and Traczewsky, confirmed later by A. Kocher, had shown a certain antagonism of iodine and phosphorus in the chemical processes of the thyroid. The phosphorus increased the iodine binding power of the gland and decreased the goitrous enlargement by its effect upon the vascular hyperplastic part, while the degenerated tissue remained uninfluenced. Kocher used phosphate of soda or protylin for many years with success, proved by blood examinations, whenever he was fearful of iodine. In 1907, he published his famous paper upon the malignant goiter which was accompanied by a contribution of his lifelong friend and co-worker, Langhans. No contribution to this phase of thyroid diseases has appeared since that could surpass it.

Before the medical society of London, out of which important contributions to the diseases of the thyroid had come and which had first hon-

ored Kocher with its fellowship, he discussed the problem on his mind for years, Graves disease. There existed, he said, much diversity of opinion regarding its true and essential nature with the effect of retarding surgery, the best practice, though Horsley had suggested its thyrogenous origin in 1885, and he had himself shown cases to his students, and had operated many times.—Kocher divided his cases in three groups, the first, vascular goiter, in which the struma was soft and enlarged, with dilatation of the vessels and systolic bruit. All of his 14 cases were cured. The second, the basedowified goiter, a simple goiter, upon which the basedow change had been engrafted. It presented Graves disease in a mitigated form. The degenerated parenchyma and the colloid had probably an anti-basedowian effect. (A. Kocher, Brano-vacky.) He had operated upon 60 cases of the II group without a death.—The third group, the typical Graves disease, a grave disorder, the onset often sudden, exophthalmos usually present. He had operated upon 106 of these cases, in all stages of the disease, with 9 deaths. He objected to the term exophthalmic goiter, because it was misleading, and discussed the goiter heart. He recognized two forms of "Kropfherz," the toxic and the mechanical, the latter due to interference with respiration and circulation, usually from intrathoracic goiters. To these Blauel had added a mixed form, mechanical and toxic combined. Surgeons had feared to remove the plunging struma in the chest, and had resorted to vigorous iodine medication instead.—However, Kocher was chiefly concerned with the origin and nature of the disease. By Graves disease he meant a thyrotoxic affection in contrast to his cachexia thyreopriva. Slides, like those we know from Halsted and later from Wilson and Plummer, were shown. The gland appeared in a varied but active functional state. The colloid was not concentrated but liquid. Kocher had used for transplantation tissue of hyperthyroid goiter with success, and never a sign of toxicity. (A paper was published upon this subject in 1908.) He had examined the enlarged lymph nodes, seen in all cases of serious Basedow and found them hyperplastic. The lymph responsible for the irritation issued from the hyperactive thyroid. He had found lymphocytosis instead of leukocytosis, a condition which had led him to his preoperative blood examinations. The greater the change in the blood, the more serious was the case. He had used thyroid extract to modify the blood findings, chemical and microscopic, and to re-

fine diagnosis. The basal metabolism test did not come into daily use at the clinic during Kocher's lifetime. A paper based upon 250 competent blood examinations was published also in 1908. They were reflection and measure of the thyroid metabolic influence upon the hemopoietic organs and the blood itself. (Naegeli v. Steiger.) Rapidity of resorption of thyroid secretion was shown in its varying iodine content. In cases of struma basedowiana after excision, with follicles empty, iodine was low; when the follicles were filled with colloid material, the iodine content was high. Clinically the vascular symptoms, dilatation, bruit, thrill with diffuse and uniform swelling in all parts of the gland, pointed to over-activity. The best evidence of hypersecretion being the cause of the disease consisted in the absolute parallelism between the degrees of diminution of morbid symptoms and the quantity of thyroid removed. And further in favor of the theory of pure hyperthyreosis were the experiments, mentioned above, with feeding of extract of normal gland. If he gave to a cretinoid or myxedematous individual with atrophy of the thyroid the quantity of extract his body needed, he would become like a normal person, but if he gave him much larger doses, for a long time, he would go to the other extreme and become a case of Graves' disease. He urged early operation and caution, when delay had depleted vital organs, and he warned that there were states of physiological hyperthyreosis during puberty and pregnancy (during disease, hepatic cirrhosis, Barker).

To the famous patients, of Bichsel and of Kropf, both demonstrating the effect of loss of thyroid, the one after extirpation, the other from disease, Kocher added Marie Schuerch, whom he operated upon on November 8, 1908. She was 28 years old, had a goiter for seven years. Because of light dyspnea on exertion, she had applied salves at times. Four weeks before admission she had seen an advertisement, "goiter cured over night," had secured the remedy and had rubbed her neck vigorously for 12 days, when she was compelled to consult the local physician. Headache, hoarseness, pain in the neck, nausea, tremor, and profuse sweats were her symptoms at that time. When admitted her pulse was 160, there was tremor of hands and of her extended legs, she had lost 16 pounds in weight and her hair was falling out, she was excited, extremely impatient, restless and sleepless and had the eye symptoms of Graves' disease. Blood examination; clotting time prolonged, leukocytes 4000, of which neu-

trophiles 50 per cent and lymphocytes 34 per cent. An adenoma, the size of a small fist, was removed. Recovery without disturbance. On the sixth day her pulse was 72. She was like a normal person, when she was discharged on the eleventh day, appetite good, no tremor, no sweating, no eyelid signs and normal blood. The excised fresh specimen weighed 160.2 gm. and contained 23.8 mg. of iodine, the normal for the whole body being 10 mg. This case induced Kocher to publish his paper on iodine Basedow. The discharge of the iodine metabolized by the thyroid was causing the symptoms, as an acute iodism would have shown itself in an entirely different manner. The syndrome did not essentially differ from that of the classic Graves disease. Anyone not knowing the cause in this instance, would have been obliged to make such a diagnosis. The congruency of the various kinds of Basedow described, including the formes frustes of Trousseau, was evident. The operative result could not be attributed to suggestive influences, so that the theory of a primary neurosis could not be adhered to. Iodine given in large doses could incite sudden onset of the disease. In small doses it could render light cases much worse, and it did effect alterations in the parenchyma, especially in diffuse colloid goiters, making them basedowphilic. The thyroid over-iodized was forced into hyperactivity. Severe mental and emotional disturbances, which increased the blood supply, (the superior laryngeal nerves containing powerful vasodilators) and altered the function of the secretory cells, might easily have the same effect. It could be understood furthermore, how circulatory and tissue changes, resulting from infectious and other diseases of the gland, might create an increased susceptibility to physiological and pathological stimuli. It is Kocher's opinion that in all cases of Graves disease iodine medication should be regarded as a two-edged sword, for it might do a great deal of damage. In practice we are still unable to differentiate the effect of iodine upon normal thyroid and in goiters with much healthy tissue, where large doses are tolerated, from the effect it has in goiters with increased secretory tendency in which only the smallest doses cannot do any harm. As a prophylactic measure he advised to prevent over-iodizing. The physiological compensatory hyperplasia with hypersecretion could be changed into Graves' disease by a careless use of iodine. To be safe, Kocher dispensed sodium phosphate in 2 to 4 gm. doses; during its influence the gland would lose its indefinite softness

and grow more resistant and clearer and more distinct in outline, and the patients improved.

To determine the origin and the essential nature of Graves' disease continued efforts were made at the Kocher clinic by Prof. Howald and A. Kocher. Many cases, at first 30, and later 160, of Basedow, were used for intensive histological and biochemical studies. They represented one-fifth of nodular and four-fifths of diffuse goiters. The nodular showed hyperplasia in irregular foci wherever vascularization was normal to accommodate. The interfollicular capillary arrangement, as pointed out by Halsted, served as guide. The diffuse glands presented but few pure cylindrical cell hypertrophies, more often the hyperplasias were seen in varying stages of development. There were glands with large and medium-sized follicles and some with the small form only. The amount of hyperplasia bore relation to the clinical phenomena, the diffuse struma being the more serious. The thyroids of the growing young are histologically very similar to those of Basedow varying only in degree. (Holmgren, growth of bone in Graves disease.) Under normal conditions even the hypertrophied thyroid is able, either to hold its secretion, or to discharge it en masse under the influence of iodine or of inflammation, without causing imbalance. The iodine binding power was lost in the Basedow struma and a proportionality between iodine content and amount of colloid did not exist. It could absorb much iodine but not retain it. Glands with part of the follicles holding concentrated, and part of them, thin liquid colloid, were strongly iodized only when much iodine had been administered previous to, or when small doses had been given immediately before operation. The relative condition of the follicular contents was proportional to the degree and course of the disease. The presence of much liquefied and iodized secretion meant grave and acute symptoms. Very little thin fluid and relatively much concentrated material in the follicles were found in cured cases of Basedow. Greater quantity of thickened secretion was identified with improvement. Increased iodization without concentrated colloid present, meant exacerbation. The histological change, known as hyperplasia, appeared in sequence to the quantity and quality of the liquefied follicular contents, and this was observed at one or the other side of a single follicle, an explanation for the varied appearance of the hypertrophic areas. The rate of absorption determined the symptoms. Hypersecretion and hyperabsorption were characteristic of Graves' disease. A remarkable fea-

ture seen was the presence of much lymphoid tissue, interstitial as well as interlobular, with lymphocytes greatly increased, which was the basis of the blood examinations mentioned. Basedow cases of years duration did not show proliferation of connective tissue. The involution ensued with concentration of the follicular contents followed by decreased cell growth and reduced vascularization. The thyroid returned to a colloid struma which it had been at the beginning of the disturbance (unlike the course of chronic hyperemia, etc.). In 1911 Kocher published 1200 operations for Graves' disease with 2 per cent mortality and 80 per cent complete cures. During December of 1909 he went to Stockholm where he received the Nobel prize for his discovery of the function of the thyroid gland. In his address on that occasion he presented a classical picture of the minor functional disturbances of the gland, hypo- and hyper-thyroidism. A very important paper for us today. His diagnostic functional tests were described the same year. They consisted in the determination of the clotting time and the differentiation of the leukocytes, repeated after administration of thyroid substance and noting the change. He had heard Landstroem deliver his doctor Arbeit upon the musculature of precision of the eyelids, and on his return home, the first hour was occupied with a discussion of the eyelid symptoms of Basedow. Kocher demonstrated his own at the same time. The sudden retraction of the levator palpebre superioris, when the patient is made to look up and down quickly. In 1917, a few months before his death, he gave a summary of all his goiter work. He had operated upon over 6000 simple goiters with a death rate of 2 per thousand. Kocher taught forty-five and one-half years at Berne. He had over 100 assistants who owe him their training. Keeping abreast with time and science, and more, running ahead of both, was Kocher's way. "Many times during the past 20 years," says Halsted, "I have stood by the side of Professor Kocher at the operating table, enjoying the rare experience of feeling in quite complete harmony with the methods of the operator, and it is a pleasure to give expression to the sense of great obligation which I feel to this gifted master of his art and science." There are more than 30 papers of him on the thyroid, and it seems only natural that von Bergman exclaimed: "Of no one have I learned more than of him." Thousands of students will applaud, for the teacher, Kocher, was the greatest.

THE CARE OF THE FEET IN CHRONIC ARTHRITIS*

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Patients with chronic arthritis suffer most, mentally and economically, when the hands and feet are affected. Arthritis of other joints may lead to serious disability, but it is with the extremities that one works and moves about. Disability of the lower extremities has a more profound effect on the psychologic state of the patient than disability of the upper extremities. Serious deformities may be present in the hands or arms of a patient, but if motion in the feet is maintained his sphere of physical activity is still wide and his spirits may be but little affected. Being a cripple implies, primarily, the inability to walk and may be attended by definite psychopathologic changes. Therefore, the care of the feet and the prevention of deformities in this region assume special significance.

For purposes of orientation the analogous classifications of arthritis in most common use are compared in Table 1.

Although the classification of Nichols and Richardson constitutes a good working basis, it is still open to many criticisms. Many believe that both the major divisions have a common infectious basis and therefore should be called simply chronic infectious arthritis. If a classification based on etiology could be formulated it would be more acceptable. It seems evident that in several different circumstances hypertrophic arthritis may represent entirely different entities, from entirely different causes. For example, hypertrophic arthritis of a Heberden's node, of symptomless senile lumbar spondylitis, and of a gonorrheal knee have little in common with each other or with the hypertrophic baseball finger joint, with the hypertrophy of a typhoid spine or with the hypertrophy in a late stage of non-specific infectious arthritis. A roentgenologically similar pathologic response is their only point of common identity. It would seem, therefore, that a classification is not complete with a pathologic response as the sole basis of differentiation.

The Mayo Clinic has adopted (Table 2), with due regard to its limitations, a clinical classification based on presumptive etiology, the basis of which seems justifiably supported by a study of the clinical data and course of the various types. Although it includes more than thirty

types or variations of arthritis, it nevertheless indicates only five great clinical divisions. These five divisions result from the great causes of joint-trouble which are, practically speaking, the five causes of all disease: (1) infections and their toxins, (2) trauma, (3) retrogressive tissue changes (senescent phenomena), (4) chemical disturbances (gout and hemophilia), and (5) trophic disturbances (Charcot's disease). The joints, therefore, seem subject to the same insults that affect other tissues.

Chronic arthritis may involve many joints in an inflammatory process and bear the designation infectious, rheumatoid, or atrophic. It may be confined to the weight-bearing joints (the chronic static type of arthritis), without the associated systemic manifestations of infection. All joints are subjected to physiologic trauma of considerable degree by normal movements, but the weight-bearing joints carry an added burden of trauma. These joints, especially those of the feet, seem prone to arthritic involvement, since places of lessened resistance are produced in them by excessive physiologic trauma. Under the added stress of infection, of abnormal trauma such as results from marked obesity, or of a combination of these factors, the weight-bearing joints may be the only joints involved, or they may be the first affected, and the last to heal, of many involved in the process. No matter what the main etiologic factor in arthritis may be, trauma is often present, either as an inciting or as an aggravating factor. In the chronic traumatic or static form of arthritis, in which pathologic obesity seems to be the dominant etiologic factor in the production of arthritis of the weight-bearing joints, the pathologic trauma must be removed by appropriate reduction of weight and support for the affected joints. In the infectious form of arthritis, even the normal physiologic trauma of walking may no longer be well borne, and special support may be needed.

The results of infection or of abnormal trauma that are most commonly associated with chronic arthritis of the feet are: (1) pronation defects; (2) depression of longitudinal arches; (3) partially rigid and rigid flat feet and toes; (4) depression of the anterior transverse metatarsal arches; (5) bunions and hallux valgus,

*Read before the North Dakota State Medical Association, Fargo, June 5, 1929.

and (6) spurs arising from Achilles' tendon or from the calcaneus. These conditions may give rise to considerable pain and may definitely aggravate the arthritis. A vicious cycle may be formed wherein the inflammation or abnormal trauma produces weakened ligaments, with pronation or flattening of the feet, and the arthritis at these sites is made worse by the abnormal trauma of an incorrect, unphysiologic position. The correction of these conditions often is neglected entirely, or they are considered part of the patient's misfortune which he must bear with the main affliction. Correction, if considered at all, is too often postponed to the orthopedic phase of the disease.

There are two phases, generally speaking, in the progression of chronic arthritis. In the acute and early chronic stages the patient consults the

simple means for preventing or correcting them, are, of course, among the first things that an orthopedist learns. As it is the physician who first sees such conditions knowledge of their importance and consideration of their treatment is a part of his responsibility in the earlier phases of the disease, but in the treatment he should coöperate with the orthopedic surgeon when possible or necessary.

In certain instances, special care of the feet may give the only relief to a discouraged and otherwise disappointed patient. In the early care of these troubles, the relief obtained may be so prompt and so striking that the patient may be made unusually grateful and confident, and may receive a stimulus that will carry him far on the slower and longer journey to the stage of inactivity of the primary lesions.



Fig. 1. Pronation defect, depression of the longitudinal arch, and outward rotation of the feet and os calcis.



Fig. 2. Posterior view of figure 1.

general practitioner and the internist. In the late chronic and inactive stages, the orthopedic surgeon usually is called to care for residual deformities. This is not a desirable situation, for the special care of the feet, and the care of the systemic manifestations and focal ramifications associated with arthritis, are generally worthy of the combined effort of both groups almost from the inception of the disease. Only by the early and continued coöperation of both physician and orthopedic surgeon can the progress of the disease be stopped, or at least directed so that the minimal amount of deformity may result.

The recognition of the importance of the associated disturbances of the feet, their vicious nature, the symptoms they actually produce or are capable of producing, and the comparatively

Flat foot.—The term flat foot is relative and not always a true definition of an abnormal condition. There is no one normal type of foot. Some arches are normally high, some quite low, and neither is necessarily pathologic. Impressions of the foot are not true aids in the diagnosis of flat foot, as many feet in which there is no pain, and which function normally, are quite flat, whereas feet which cause great pain may give normal impressions. An attempt should not be made to elevate the arch if the foot is strong and active, and gives no pain, even though the arch is low; however, if there is pain in the foot, even if the arch is high, the foot is in urgent need of care. Indeed, when the ligaments once start to stretch, the high arch breaks down more easily than a low arch. The term "broken or depressed arch" or "weak foot" is more cor-

rect than "flat foot."

The integrity of the individual arch is maintained largely by the compensation of the ligamentous support against body weight. Muscular support is a factor. When ligamentous "decompensation" occurs, broken arches result and symptoms develop. Since visual examination of an arch, examination by impressions of the foot, or even roentgenograms, may be misleading and often productive of erroneous conclusions regarding function, subjective symptoms assume the important part in diagnosis. Pain in the foot is the most significant subjective symptom. The site of the pain in cases of broken arch depends on the physiologic anatomy



Fig. 3. Tracing of the feet of the patient shown in figures 1 and 2.

of the decompensating ligaments.

The chief causes of broken arches in adults, excluding neurologic lesions, are infection (local or general) and trauma from occupation or from pathologic obesity. A high percentage of patients with chronic infectious arthritis examined at the Mayo Clinic have pronation defects and broken arches. In most cases of infectious arthritis there is swelling of soft peri-articular tissue and capsular thickening. Also, in the feet at least, there is weakening, stretching, and occasionally contraction of the ligaments. The flat foot of the arthritic patient, aside from the inflammation, has the usual char-

acteristics of the ordinary nonarthritic flat foot. With arthritis, pronation of the foot at the ankle is usually the first sign of beginning ligamentous decompensation, and generally appears before lowering of the longitudinal arch. When pronation alone is present the function of the foot can be restored to normal by supination. The pronation is due to inward and downward rotation of the astragalus on the os calcis (often carrying the scaphoid with it) and to the outward rotation of the os calcis, which is best seen when the patient stands with his back to the examiner and the feet parallel. Normally, the



Fig. 4. Combination last shoe with orthopedic heel and transverse bar.

central line of weight bearing, passing over the anterior superior spine of the ilium, extends down through the middle of the patella and over the second toe. In the pronated foot, this line of weight may pass to the inner side of the big toe or down the center of the longitudinal arch.

The patient often stands with the anterior part of the foot abducted, and in walking assumes a characteristic stiff, awkward gait, with the feet turned out. As the normal rotary motion of the foot is accomplished by motion at the subastragaloid and midtarsal joints, pronation defects are accomplished by active and pas-

sive limitation of inversion and eversion with pain on forced motion. Dorsal and plantar flexion operate through the ankle, and are not affected by the subastragalar abnormality of a pronation defect. The inner border of the normal foot is concave, but in the pronated and relaxed foot the inner border is convex (Figs. 1, 2, and 3).

The degree of pain is not always proportional to the degree of pronation or of depression of the longitudinal arches. Pronation or depression which occurs rapidly causes much more distress than deformities which occur gradually, and pronation with depression is more painful than pronation alone. In the foot affected by infectious arthritis, early gradual pronation alone often occurs, with depression as a later and less frequent complication. Pronation places a strain on the ligaments and muscles on the inner side of the leg, chiefly the tendons of the tibialis anticus and posticus muscles. The internal malleolus and head of the astragalus become more prominent and the external malleolus less so. Consequently, the chief points of tenderness and pain are along the inner side of the plantar fascia, under the tubercle of the scaphoid, at the internal malleolus, and along the subastragalar joint line. Spasm of the peroneus muscles may be associated with lateral pain in the side of the leg and calf. If patients with local involvement of the foot or general constitutional affections are confined to bed for weeks and then allowed to get up and walk in ordinary bedroom slippers or stocking feet, they often complain soon of pain in the foot, which is usually of this type. The foot should be held in slight supination and should be allowed to bear weight only when leather slippers or shoes that give support to the arches are worn. Many defects of the foot could thus be prevented.

In the chronic, traumatic, and static form of arthritis, the disclosures on general examination are like those just related, but without the evidence of inflammation. This type of arthritis has been thought to be due to low-grade infection in an obese person, attacking only the joints subjected to excessive physiologic trauma which become areas of lowered resistance; the systemic manifestations of infection at least are entirely different from those of the so-called infectious rheumatoid type of arthritis. The occasional slight rise in temperature, low blood pressure, loss of weight, decreased appetite, secondary anemia, cold and clammy condition of the extremities, muscular atrophy, reduction of gastric acidity and sugar tolerance, and afebrile tachycardia that characterize infectious rheu-

matoid arthritis usually are all absent in static arthritis. I believe that static arthritis is not infectious, but that it is due to the chronic trauma of obesity. Static arthritis is one of the penalties of obesity, and it is the reserve tensile strength of the ligaments and cartilages of the joints thus injured that determines the length of time between the gain in weight and the appearance of arthritis. Sudden, acute obesity would be expected to lead to "decompensation" in the joint more readily than slowly developing obesity to which there may be accommodation at least for a number of years.

The affection seems, therefore, largely a question of abnormal statics (abnormal bodily mechanics); the joints usually affected are, first, the feet or knees, then the lumbar part of the spinal column, and occasionally the hips; however, the condition may be confined to the lumbar part of the spinal column, the knees, or the feet. The roentgenographic changes in static arthritis are either periarticular or hypertrophic; the changes practically never are destructive, and in the spinal column they rarely extend above the second lumbar vertebra. What would seem to be a further important point in the differential diagnosis of this form from the infectious form of arthritis (which, of course, may occur also in an obese person) is that even though the knees or back may be very sore, muscle spasms about the knees or lumbar part of the spinal column are not present in sufficient degree to produce flexion deformities and kyphosis. If these occur, a primary infectious element probably is present.

One can readily appreciate what may occur when the niceties of architectural balance are disrupted in a case of static arthritis, first, by obesity itself, then by improper shoes, and last by the vicious cycle induced by the resultant pronation and depression defects themselves. The head of the astragalus may rest on the floor with weight bearing; with knock-knee an additional burden is present, putting added strain on thigh and lower lumbar muscles. Tender areas in the feet may be supplemented by fatigue pains in the arches and tender spots in the muscles of the calf.

With this conception of the disease and its etiology, it is obvious that treatment is primarily centered on means to provide support and to relieve the abnormal trauma of obesity. At the clinic, the shoe ordinarily used has a straight last (a last with a straight inner border) and a rounded toe with a broad heel. The shank of the shoe has the additional support of a piece

of spring steel. The anterior part of the foot may be rather wide and the heel narrow, or the anterior of the foot may be narrow and the heel wide both of which can be fitted by a combination last. A combination last is one which accommodates a foot in which the normal relationship in the relative size of the anterior part of the foot and heel are disproportionate. As soon as the shoes are fitted, a Thomas rubber heel (one in which the inner border extends farther forward than the outer border and flares outward) is supplied, and the patient is urged to walk to accommodate the shoe before other alterations are made. As necessary, the heels, and at times the inner sides of the soles, are supinated from an eighth to a fourth of an inch. When there is more pain, sole-pads or heel-pads may be fitted in the shoes. Felt pads usually afford the most comfort, and piano-felt is used because it is firm, does not change shape on pressure, and yet is easy to mold to the necessary conformation. The pads must be fitted gradually, as building up too rapidly causes an increase in pain. Frequent additions to the pads can be made until the necessary support is obtained, and the foot is adapted to them.

Treatment includes, primarily, reduction of weight to as near normal as possible, proper support for the feet as afforded by correct shoes with specific alterations as indicated, and strapping of the foot if necessary during the period of rather acute pain. The straps are removed as soon as possible and usually shoes give sufficient support (Fig. 4).

The chief objection to the rigid arch supports so promiscuously and widely used is that they may induce atrophy of muscle by their extreme rigidity. Some of the less rigid supports afford relief, and if the patient is comfortably fitted further alterations need not be made. A high-heeled shoe, of course, creates a marked incline or slope to the foot and the weight-bearing surface is dangerously decreased. A high-arched shoe, without a rigid shank, allows a weak longitudinal arch to become depressed. A narrow, pointed shoe restricts the motion of the toes, decreases the weight-bearing surface, increases the trauma to the heads of the metatarsals, and aids in producing metatarsalgia.

The application of correct shoes furnishes an important supplement to physiotherapy and special exercises for the feet. The contrast baths, especially, afford relief and should be used in addition to periodic professional and continuous home physiotherapy and exercises for the cor-

rection of the broken arches. The simple methods of applying heat that a patient may use in his own home include especially the use of a "baking machine," a cradle of carbon lights, in the use of which he has been carefully instructed by a physician or physiotherapist. Heat can then be applied for approximately twenty minutes once or twice a day and this may be followed by certain specific exercises for the correction of the pronation and depression. It is difficult for the patient to apply massage himself; generally this should be done only by trained persons.

Along with physiotherapy, typhoid vaccine is given intravenously every four days. Following this there usually is a reaction in which the temperature may reach 102° to 103° for one or two hours, but the pains in the joints usually are considerably relieved and the range of motion increased.

Hallux valgus with bunion.—One of the most common disturbances of the feet, especially if there are broken arches, is hallux valgus with bunion; it may be particularly painful when it is associated with and influenced by destructive deforming arthritis. The results of inflammation produce lateral deviations of the toes as well as of the fingers; however, the deformed foot must be fitted with the proper shoes. Often, associated with the hallux valgus, are bunions, painful bursæ over the heads of the first metatarsal joints. These deformities are often induced by narrow, pointed shoes, and stockings that are too short. If the bunion does not cause pain, a shoe that gives the anterior part of the foot plenty of room is provided. If, however, the pain is severe, surgical intervention, such as the Mayo operation for bunion, in which the head of the first metatarsal is removed, may be necessary. Amputation of the great toe or amputation for marked deformity of small toes may be necessary.

Spurs.—In the foot affected by arthritis there may be tenderness localized at the bottom of the heel, at the attachment of the plantar fascia, at the sides of the os calcis, or at the insertion of the tendon Achilles on the os calcis. This is due to the formation of spurs of the heel arising from thickening of soft tissue associated with painful bursæ at the attachments of the tendons. As the inflammatory thickening persists and progresses, osteogenesis from the adjacent periosteal tissue takes place, and bony spurs are produced. The roentgenogram may not give evidence of abnormality until the bony deposits occur. Pain and tenderness may be

present before or after the roentgenogram is positive, and may be entirely out of proportion to the size of the bony spur. The pre-osteophyte stage (with negative roentgenograms) may be very painful. On the other hand, a large bony spur which does not cause pain often may be found.

The etiology of spurs is varied. In infectious arthritis, there may either be actual infection at these sites in the foot, or merely undue stretching of the plantar fascia in relaxed, pronated feet. This was formerly thought to be especially associated with gonorrhoeal arthritis, but it is now recognized that trauma, or the results of nongonorrhoeal focal infection, are more frequently the cause. The pain and tenderness are directly under the anterior portion of the os calcis at the attachment of the plantar fascia. The diagnosis suggested by the site and character of the pain may be confirmed by pressure on the heel or by lateral compression of the os calcis, whether or not the roentgenogram is positive.

Conservative treatment is advisable and palliative measures often are successful until the arrival of the late inactive stage, when even large bony spurs may become painless. The relief on removal of pressure from the painful areas is the chief aim. For the calcaneal spurs, soft sponge-rubber pads may replace the heels of the shoes, or felt pads, with a hole directly under the spurs, may be inserted inside the heel of the shoe. Felt pads placed in the shoes, on either side of the painful areas, also may add comfort. The local application of unguentum hydrargyri as a counterirritant may supplement heat and massage.

Surgical intervention is seldom advocated at the clinic, for the spurs are prone to recur. Even if they do not recur the pain often persists after surgical treatment. Operation is justified and may be attempted if the spurs are excessively long and produce mechanical disturbances.

Metatarsalgia.—Depression of the anterior metatarsal heads, associated with painful callosities, is common in the arthritic foot. Actually, the anterior arch, so-called, exists only in textbooks on anatomy or when there is no weight-bearing; on weight-bearing, there is normally complete and painless depression of this arch, and when the weight is removed from the foot, the arch is at once restored. When it is continually depressed, metatarsal pain and callosities are produced. The depression of the arch makes the heads of the metatarsals prominent,

and the toes become flexed dorsally. High-heeled shoes that are short or narrow in the toe, throw excess weight on the heads of the metatarsals and produce metatarsalgia by this effect alone or in combination with inflammatory changes in the foot. As a result, there may be one large pad of callus or two or three small pads under the heads of the metatarsals. These may cause severe pain, especially at the third and fourth toes. The feet are fitted with shoes which allow more room for the toes. Transverse leather bars are fastened on the soles of the shoes just back of the heads of the metatarsals or a firm pad of piano felt is placed in the shoe, so that during weight-bearing the pressure comes first on the heel and then on the bar or pad just back of the painful area.

If it is impossible to straighten the toes, the heads of the metatarsals may be removed, with the intention of producing shortening; after shortening has taken place the toes can be straightened. Another measure for straightening the toes is transplantation of the long extensor tendons of the toes to an attachment just behind the metatarsal heads, capsulotomy of the metatarsophalangeal joints, and induction of ankylosis of the first interphalangeal joints.

Rigid flat-foot.—A very crippling condition is rigid flat foot. The pronation and relaxation of the longitudinal arch may be extreme; if so, these conditions usually are associated with abduction of the anterior part of the foot, so that the patient walks on the head of the astragalus and scaphoid bones, which usually are underlain by painful callosities.

If the rigid foot does not cause pain, and the patient is able to carry on his usual labor, interference should not be attempted. If it does cause pain, conservative physiotherapeutic measures are first employed, especially if any passive supination remains. If mobility is not increased by a prolonged course of heat, massage, and exercises, then manipulation under anesthesia, followed by the application of casts, is necessary. After this, correct shoes to hold the feet in a natural position are provided. If manipulation fails, surgical intervention may be necessary. A wedge of bone is removed from the inner side of the foot in an attempt to reform the normal longitudinal arch.

Hallux rigidus.—Marked pain in the receding foot during walking may be caused by hallux rigidus. In walking, lack of mobility and loss of extension of the toes produce pain across the anterior part of the foot. Normally, on walking, the weight is borne first by the heel, then by the

anterior part of the foot. With the final push prior to advancing the receded foot there is dorsal flexion of the toes, especially of the great toe. When this is prevented by ankylosis, as in hallux rigidus, the gait is altered to minimize pain. A shoe with a rigid sole will aid materially in relieving the discomfort. If these measures are unsuccessful, arthroplasty may be performed.

SUMMARY

The common deformities discussed in association with chronic arthritis of the feet may cause great discomfort which need not necessarily be tolerated as an inevitable part of the patient's suffering. Often they can be prevented, and their prevention or recognition and early care should be a part of the physician's responsibilities in the "medical phase," not in the late or "orthopedic phase" of the disease. Consultation with an orthopedist is very desirable throughout the entire clinical course, but much can be done by the general practitioner without recourse to surgical operation. That a vicious cycle is often induced by these secondary and minor lesions should be recognized. An understanding of the rather simple mechanics of the normal foot, and the physiologic abnormalities which these deformities can produce, will lead to a comprehension of the uses of the old and simple devices described. Local physiotherapy and general treatment for the primary condition, arthritis, are, of course, measures of great importance.

TABLE I

CLASSIFICATIONS OF ARTHRITIS IN COMMON USE

Author	Basis of classification	Two main divisions
Nichols and Richardson (America)	Pathologic data	Proliferative and degenerative
Goldthwaite (America)	Pathologic and roentgenologic data	Atrophic and hypertrophic
Garrod (England)	Clinical data	Rheumatoid and osteo-arthritic
Fischer (England)	Anatomic site	Synovial and chondro-caseous

TABLE II

GENERAL CLINICAL CLASSIFICATION OF ARTHRITIS

1. Infectious arthritis
 - Known to be specific infectious
 - Tuberculous
 - Gonorrhéal
 - Pneumococcal
 - Typhoid
 - Syphilitic (spirochetal, not arthropathy)
 - Staphylococcal (septic)
 - Probably specific infectious (with toxins)
 - With rheumatic fever (secondary to streptococci or their toxins)
 - With amebic colitis (amebic or secondary to streptococci or their toxins); rare
 - With ulcerative colitis (secondary to streptococci or their toxins); rare
 - With certain skin diseases (impetigo contagiosa, psoriasis)
 - Nonspecific (chronic infectious type)
 - Articular infectious arthritis
 - Arthritis of nonarticular localization (myositis, fibrositis, lumbago)
2. Traumatic arthritis
 - From extrinsic trauma (generally acute):
 - (a) articular (traumatic, baseball fingers) and (b) nonarticular (nun's knees and housemaid's knees, sprains, strains)
 - From intrinsic trauma (generally chronic; postural arthritis, static arthritis of obesity)
3. Senescent arthritis
 - Fingers (Heberden's nodes)
 - Hips (morbus coxæ senilis)
 - Hypertrophic spine of the elderly
 - Knees (often in combination with static arthritis of obesity)
4. Gouty arthritis
 - Acute (recurring with complete remissions)
 - Chronic (progressive with residual deformity)
5. Athroopathy
 - Secondary to lesions of the central nervous system (syringomyelia, Charcot's disease)
 - Secondary to certain pulmonary conditions (pulmonary ostocarthopathy)

DISCUSSION

DR. PAUL BURTON (Fargo): I can add nothing to Dr. Fortin's paper, but I merely wish to say that he is a Fargo boy who has made good at Rochester. I am sure we are all agreed that he gave us a splendid talk on painful feet, and I wish to express my personal appreciation of his contribution.

THE BOEHLER METHOD IN THE TREATMENT OF FRESH FRACTURES*

BY EMIL S. GEIST, M.D.

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Before leaving on a study trip to Europe in the spring of 1929, I had read several articles by Primarius Lorenz Boehler, of Vienna, on his methods of treating fresh fractures. These methods seemed at variance with the usually accepted practice and his writings made little impression on me; in this my experience duplicated that of many others.

A personal visit to Boehler's clinic in May, 1929, at once entirely changed my attitude as it did that of many others. It was evident that here an entirely new path was being broken in an old, old field of endeavor. It seemed impossible that anything of epoch-making nature could ever occur in revising our methods of treating fresh fractures. But this is exactly what occurred, and what is occurring now.

I spent ten full days at Boehler's clinic and it is with deep appreciation that I acknowledge my thanks for his permission to have copies made of his moving picture films which demonstrate his work and which it is my pleasure to show to you tonight.

Boehler is in charge of the Vienna Accident Hospital. He is surrounded by an efficient corps of assistants and technicians whose team work is excellent. During my stay I saw five to eight fresh fractures per day besides numerous other forms of accident surgery. There abounds in this clinic a marked atmosphere of energy, gusto, and "pep" which is very American indeed. In fact, Boehler spent some time in our country before the war. Personally Boehler is a man of extreme modesty who is intensely interested in his work.

Boehler has described his work in a small book of some one hundred and eighty pages which has been well translated. It is a masterpiece of a lucidity and brevity well worthy to be compared with the writing of Will Mayo at his best.

It would be impossible within the confines of a short paper to give a worthy account of the Boehler method. This communication is intended to call your attention to it. However, some of the "high spots" may be mentioned:

(a) In Boehler's fracture work practically

all anesthesia is obtained via the route of the hypodermic needle; local, spinal, or conduction anesthesia being used.

(b) The plaster cast is applied without padding. There are rare exceptions to this rule. This presupposes a perfect plaster technic.

(c) The crutch is frowned upon and is but rarely used.

(d) Whenever possible skeletal traction is used. In Boehler's clinic this method of extension has been developed into a fine art.

(e) The open operative reduction is frowned upon. With Boehler it is the rare exception.

(f) The physiotherapist and the masseur are practically non-existent in the Boehler clinic. Boehler's method exacts, and receives, the patient's active co-operation in maintaining the tone and nutrition of his own muscles as well as the mobility of his joints.

(g) Boehler's recommendations as to the duration of treatment of certain fractures differ materially from hitherto accepted notions. In some fractures it is much shortened; in others much prolonged.

(h) Armamentarium has been developed by Boehler which is a model of simplicity and standardization and which for the most part is original.

(i) Boehler has in no way attempted to be irrationally iconoclastic. He has not meddled with fractures in which the accepted treatment could not be improved upon; such as for instance, the patella; the olecranon. In fractures of the neck of the femur, Boehler still uses the classical Whitman method. He no doubt feels that up to now it is the most promising method which has been evolved in spite of the too numerous poor results of the Whitman method even in the hands of the best surgeons and orthopedic specialists; the fault probably lying with the method.

In most fractures of the common, and uncommon, variety Boehler's investigations and methods represent a distinct and novel step forward, and are additions to advance made by previous workers in the field.

In a few instances (carpal scaphoid, os calcis, and others), Boehler's researches and practices have definitely solved problems which up to now

*Read before the St. Louis County Medical Society, January 9, 1930.

seemed impossible of solution. In fracture of the carpal scaphoid, Boehler reports sixty successive cases of bony union where heretofore non-union was the expected occurrence. In the so very common fractures of the heel bone Boehler's work, to my mind, stands as the final correct solution of the treatment of this most disabling lesion. His original work on fractures of the os calcis is up to now his most important single contribution to our knowledge of fractures.

Since my return to America, my associate, Dr. M. O. Henry, and myself have treated about thirty-five cases of fresh fractures in which we closely followed the directions of Boehler and used his apparatus. These fractures were nearly all of severe and difficult types and include many of the varieties of fracture of the upper and lower extremities. We feel that we now have at our command a method superior to those of which we knew before because of their simplicity, their anatomic, and physiological soundness, and because of the comfort to the patient. Most of these cases are of too recent date to report upon tonight and we will make this report in another communication.

In conclusion I may state that this method is for the treatment of fresh fractures only. The sooner the patient is seen and properly treated the better it is for all concerned. Delay for a matter of days and weeks imperils the end result.

BOOK NOTICES

THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION FOR 1928. Volume XX. Edited by Mrs. M. H. Mellish, Richard M. Hewitt, M.D., and Mildred A. Felker, B.S. Octavo volume of 1197 pages with 288 illustrations. Philadelphia and London: W. B. Saunders Co., 1929. Cloth \$13.00 net.

The 1928 edition represents the papers, or an abridgement of papers, which have been given by members of the staffs of the Mayo Clinic and Mayo Foundation. Practically all of these papers have been given as addresses or have been printed elsewhere in magazines during the past year. It would be quite unnecessary to give any general discussion of this work other than to say that it shows the result of a tremendous amount of investigation and energy on the part of the men who have done the work. The volume is recommended to all as one containing a great deal of information.

—A. E. CARDLE, M.D.

MODERN METHODS OF TREATMENT. By Logan Glendening, M.D. Third edition. St. Louis: C. V. Mosby Co., 1929. 815 pages. Price \$10.00.

This is an up-to-date review of the recognized treatment of the more common diseases. Dr. Glendening gives us in detail the specific therapy for each type of ailment, and explains why that particular method is the logical one, and tells why other methods frequently used are at fault. In many instances the treatment of a certain disorder is given in two or more parts of the book, under different headings, due to the fact that the book has been very carefully subdivided into chapters which deal with a very definite closely classified subject.

The first chapter deals with rest; not only the complete relaxation of the entire body such as rest in bed, but also gives the value of rest of different parts of the body.

Chapter two is named drugs. This is one of the largest chapters in the book. Here he gives a detailed description of what, when, how much, and how often, the recommended drug is to be given. He also explains how and when to stop and what drug not to give, "To learn these things is to learn an art, to an art there is no end." The truth of this quotation is brought home to all of us very frequently.

In the third and fourth chapters Dr. Glendening deals with Biological and Organotherapy, he begins with a quotation from Huxley. "The greatest tragedy in the world is a beautiful theory killed by an ugly little fact." From this he goes on to explain how in certain cases vaccines and biological preparations are valuable in therapy and prophylaxis. However, he feels that the big majority of these preparations on the market of today should be used with caution, as they have little clinical value. His remarks about the use of glandular substances are very similar to those about biologicals, in that the few which we readily know about work wonderfully well but that there is a great deal yet to be discovered in this field.

Chapter five dealing with diets goes into great length describing the various food values, the body requirements in twenty-four hours of the different types of foods, and then the part that diet plays in the treatment of disease. There is also a detailed sample of the different diets to be used in those diseases which cause a change in the metabolism, or are due to dietary indiscretion.

The remainder of part one deals with the special types of therapy, as hydro-, helio-, radio-, electro-, and psychotherapy, also the part played by climate and exercise.

Part one ends with the chapter on miscellaneous procedure, taking in blood transfusions, venesection, lumbar puncture, artificial pneumo-thorax, etc.

Part two goes into the direct treatment of specific diseases and conditions giving again the direct applications of the methods described in part one. In this part the various therapeutic measures are

(Book Notices continued on page 50)

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The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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A NEW DEVICE

A device for the hard of hearing has been invented recently and is used in the Alexander Graham Bell School in Chicago and is likely to become a valuable instrument. For instance, a man who does not hear at all is given a small handpiece which he holds in close contact with his hand and it magnifies the vibrations of the voice 175 times. Of course, accompanying this are two small ear tubes which are not uncomfortable or unsightly and which carry the sound to his ears. This instrument has been devised by Professor Robert H. Gault of the psychology department of Northwestern University. The explanation that the sense of touch is the parent sense is given by scientists. Professor Gault worked upon this principle. The instrument includes an earpiece for those who have any residual hearing, no matter how small the degree, a mouthpiece and the circular object containing a magnet and diaphragm. The diaphragm registers the spoken vibration upon the skin of the hand.

"Teachers of the deaf and mute have encouraged their pupils to lay their hands upon the teacher's throat while she was speaking," said Miss Marne Lauritsen, a student of Professor Gault's and his chief aid in developing the instrument, "but as this practice could only be followed one at a time the rest of the class be-

came inattentive. With this touch-telephone children can not only feel the words coming through it, but can talk into it to each other, and 'hear' each other and the teacher without watching the lips."

If this statement is true, and we have no reason to doubt it, this promises to offer one of the greatest improvements of this kind in the country; it should be a great help to the hard of hearing who have employed lip-reading and sign and manual gestures for a long time without any great amount of satisfaction. To have an instrument of this size, no matter what the inconvenience in using, will gratify the majority. We have written for further information on this subject and we will be glad to pass it on to the various interested readers.

PROHIBITION

The daily press, those of large dimensions and large circulation, must be bothered by the differences of opinion between the wets and the dries. It looks for the present at least as if the prohibition law can never be carried out. We are not talking in the interests of the wets, but merely comment upon the foolhardiness of the situation, as the number of bootleggers is apparently legion.

Being of the medical profession we can say very openly that people come in who confess that they have been drinking hard and what they drink is "moonshine" that is not legitimate liquor. It would probably be considered poison properly, yet how many drink it without hesitation, seemingly enjoy it and actually suffer no ill-effect?

It is our experience that the man who has not been drinking, perhaps has abstained for years, that suddenly discovers a desire for liquor and not getting the liquor he wants or should have takes to the moonshine. For instance, a druggist came in for treatment and told us in his history that he had not taken a drink for twenty years, which should free him from any of its poisons, and for some unknown reason, even unknown to himself, he decided he needed a drink. He came to us with blurred vision, a violent excitement and other symptoms. He finally made a complete and full recovery in three weeks time after the liquor was removed. The only proper way is to remove it entirely and promptly.

From what we hear of difference of opinion, from the wets and the dries in all parts of the country including the President and the members of the House and Senate, no solution has been arrived at; nobody knows what can be done or

what may be done, so the hope of reformation in the matter of drinking is entirely up to the individual. The individual could be a prohibitionist if he chose and he could make his friends prohibitionists if he would by his example. The man who would get his liquor from abroad or a neighboring country sometimes has it confiscated so that he then is unable to get the stuff he wants. In Detroit and nearby where crossing the river means access to plenty of various kinds of stuff the conflict between the dry agents and the wets is a very serious matter. The dry agents have no right to kill a man for drinking or the fact that he may be drunk, when he can explain the situation.

The New York doctors have been very ardent and very earnest in their efforts to get the prohibition law modified; they have worked strenuously and have many adherents on the ground of medical production of liquor. There are some cases that are in need of good whisky; it has probably saved many lives. At present with the government supply of whisky guarded by government houses and prevented from distribution that *ought to* eliminate the liquor problem, but the more it is advertised the more people are inclined to drink. The fashionable people who have liquor in their homes spread it around in various ways to their guests in drinking parties, various little entertainments that are given in the homes and when friends get together where the cocktail is a common part of the entertainment offered. In fact, the more opposition that is spread abroad with regard to drinking the more antagonism is felt among the people who have it in their homes for their own benefit and the benefit of their friends. The law has no right to enter any private home unless the occupants of that home have in some way infringed upon the law. It is common knowledge that when the householder is known to have liquor in his possession then the dry agent is the one who chooses to overlook him. He knows really it is none of his business to regulate what his friends have in their possession.

It is our impression that prohibition never will succeed unless the law is modified. If it were to be handled as it has been in many other countries where the law is one of temperance or restricts the use of stimulants the people are not drunkards as they are in the United States. The time when there was temperance in the country was a time when people felt it a matter of honor to have a temperate amount, temperately given and temperately consumed and there were no serious ill-results. People rarely be-

came nuisances while they were drinking or when drunk. But, set down an iron-clad rule that you shall have nothing of the kind on the premises or in your possession and the populace is angered and forthwith prohibition becomes impossible.

With the saloons gone (except in some of the larger cities where they have regular bars and regular patrons) the people seem to get along very well. We do not think even the chronic drunkard would welcome the return of the saloon, but he would like to be able to come home at night and have a drink with his family or friends or by himself.

Stories that we hear about drinking among the senators and congressmen are enough to make one "ha ha" the rulers of the land who make and keep the laws and who are sometimes the first to break them.

WETS INVOKE CLASSIC POET IN DRY ATTACK

Bishop Cannon "Nominated" Cheer Leader—
Bible Quoted

Washington, Jan. 9—Horace, the Latin poet, came to the rescue of wets in the house yesterday when they continued their attack on the dries for their approval of what they termed "dry killings."

Representative Black, Democrat, of New York, delving into the classics, shouted "nunc est libendum (now is the time to drink)."

AMENDMENT PROPOSED

"There has been a general let-down lately in the speeches made by the dries," he declared, citing the address of Representative Beedy, dry Republican of Maine. Beedy, he said, "advocates a new amendment to the eighteenth amendment," which he said would read something like this: "That this amendment shall not apply to red-blooded American seamen, standing in water three feet deep, provided they can steal a rum-runner's liquor."

Referring to a speech made by Representative Adkins, Republican, Illinois, Black said: "Mr. Adkins said he was at a party and did not see any drinking. I wonder if he was at that 'dry convention' the Republicans held at Kansas City a short while ago."

NOMINATED CHEER LEADER

Bishop James Cannon, Jr., of the Methodist Episcopal church, South, was nominated by Black to be cheer leader for the dries. "Of course," he said, "I do not want him to run and

turn any somersaults here because some chips and stocks might fall out of his pockets."

Representative Schafer, Republican, Wisconsin, drew an analogy from the Bible.

"Each day's tragic news," he asserted, "indicates more human lives sacrificed on the altar of prohibition Baal."

He characterized this figure as a "god" of the dregs, "which must have blood."

ROBERT DOUGLAS ALWAY

We regret to record the death of Dr. Alway, of Aberdeen; he will be missed because of his many interests in medicine and medical societies. He was always to be found at important meetings when it was possible for him to get away. As an ophthalmologist and an otolaryngologist he was looked upon by his many friends as a comfortable doctor, if we may so put it.

Doctor Alway made friends wherever he went. He was at one time associate editor of THE JOURNAL-LANCET from Aberdeen and took much interest in the LANCET and in his work. He was careful about recording things of interest. Those who knew him personally will testify to his many good qualities. He was an earnest, interested physician and he did, as many other doctors do, more than his share of charitable work. He had a name and place for himself in Aberdeen that will not be soon forgotten or filled.

When he was in Minneapolis a few months ago he was complaining of not feeling well. Perhaps his ailment then was a gradual onset preparing him for the ultimate illness which took him away. THE JOURNAL-LANCET extends sympathy to his wife and family.

MISCELLANY

THE CONTINUED DEVELOPMENT OF THE WHITE HOUSE CONFERENCE FOR CHILD HEALTH AND PROTECTION

In the last issue of THE JOURNAL-LANCET, the reader's attention was called to the rather unfortunate title initially bestowed upon the White House Conference for Child Welfare and Protection, which appeared to many to suggest a social rather than a health-betterment project. As the heading of this article indicates, the Directors of the Conference

have taken heed to the interpretation likely to be put upon the undertaking and later releases show that a revision has been made.

While formal announcements of further appointments to the major Committees have not been received, advices verify the representation of Minnesota people on certain committee groups, news of which will be welcome to our readers. Among them we find H. A. Whittaker, C. E., of the Minnesota State Department of Health, as Chairman of a Committee on Milk Production and Control; Dr. Fred L. Adair, recently of the University of Minnesota and now of the University of Chicago, as Chairman of the Committee on Pre-natal and Maternal Care; Dr. John E. Anderson, Director of the Minnesota Institute of Child Welfare, as Chairman of the Committee on The Pre-School Child; and Dr. Edgar J. Huenekens, of the University of Minnesota, who has appointments on two or three Committees.

It is of additional interest to note that the fitness for such a task as the Conference presents of President F. J. Kelly, of the State University of Idaho, formerly Dean of Administration at the University of Minnesota, has been recognized by his selection as Chairman of one of the main Committees—that devoted to the "Education and Training of the Child."

Under the Section for study of "The Medical Care of Children," the choice of a Sub-Committee on Nursing has been reported, with S. Lillian Clayton, Director of the School of Nursing of the Philadelphia General Hospital, as Chairman; and Edna L. Foley, of the Visiting Nurse Association, Chicago; Helen Chesley Peck, of the Infant Welfare Society, Minneapolis; Stella Goostray, of the Children's Hospital, Boston; Lucy Minnegerode, of the United States Public Health Service; Winifred Rand, of the Merrill-Palmer School of Detroit; Katharine Tucker, Director of the National Organization for Public Health Nursing, as her associates.

RICHARD OLDING BEARD, M.D.
Executive Secretary, Hennepin County
Public Health Association.

UNLICENSED CANCER SPECIALIST CONVICTED OF PRACTICING HEALING WITHOUT A BASIC SCIENCE CERTIFICATE

Boyd T. Williams, owner and operator of a Cancer Sanatorium, at 525 University Avenue, S. E., Minneapolis, Minn., was convicted October 31, 1929, by a jury in the District Court of Hennepin County, on a charge of practicing healing without a Basic Science Certificate. The evidence showed that on or about September 11, 1928, one Mrs. Sophie Weisskirch was operated on at the Williams' Sanatorium for the removal of an alleged cancerous right breast. The evidence showed that on the day previous, Mrs. Weisskirch had been examined by Dr. William and her ailment diagnosed as cancer.

Previous to Mrs. Weisskirch's going to the Williams' Sanatorium, she had received a letter and catalog from Dr. Williams in which she had been informed that small cancers could be cured in a few hours, and large cancers in from seven to nine days.

Mrs. Weisskirch is still receiving medical attention because of the unhealed condition of her body

following the above removal of her right breast. She paid Dr. Williams a fee of \$300.00.

The validity of the law was attacked during the trial and also the regularity of the appointments made by Governor Christianson to the Basic Science Board.

The Court overruled the defendant's objections, upholding the law and the appointments of the Board members, the Court's ruling being in direct opposition to the rulings made by the Court in Pope County in the case of State of Minnesota vs. Robert McGraw.

The case attracted quite a number of people and among those present were persons frequently seen at the State Capitol during the 1929 session of the Legislature.

On Monday, November 4, 1929, the Court imposed a fine of \$250.00.

It was disclosed during the trial that the defendant was convicted on his plea of guilty in 1913, to practicing medicine without a license and was fined \$50.00; also, that the defendant was convicted in 1928 on his plea of guilty to a violation of the Basic Science Law at which time he was fined \$100.00.

The investigation of the case was handled by Mr. Brist on behalf of the State Board of Medical Examiners, and the trial and upholding of the Basic Science Law was handled by Mr. Skahen and Mr. Larson of the Hennepin County Attorney's office.

On November 22, 1929, a motion for a new trial was presented to Judge Baldwin in the above entitled matter, and following lengthy arguments and the furnishing of briefs on both sides to the Court, the motion was denied on December 3, 1929.

NEWS ITEMS

Dr. W. F. Woodcock, of Aitkin, Minn., died last month at the age of 80 years.

Dr. E. V. Bobb, of Mitchell, S. D., has moved to San Marino, California, where he will open offices for general practice.

Dr. H. S. Tennant and Dr. R. A. Frary, both of Stanton, S. D., have been elected officers of the Five County Medical Society.

Dr. Herman M. Koller, of Minneapolis, has returned after spending three months attending clinics in Vienna, Prague, Berlin and London.

Dr. A. C. Dean, of the Hot Springs, S. D., Clinic has been elected to a fellowship in the American Academy of Ophthalmology and in Otolaryngology.

Dr. M. G. Danskin, of Glendive, Montana, was again awarded the contract as County Physician at the regular meeting of the Board of County Commissioners.

Dr. Owen H. Wangenstein, of the University of Minnesota, recently delivered a very inter-

esting talk before the Sioux Falls District Medical Society at their recent meeting.

Dr. Percy Demo, of Fairmont, Minn., a son of Dr. and Mrs. W. A. Demo, will soon begin practice at Welcome, Minn., and will be associated there with Dr. P. F. Holm.

Dr. Hugo Neukamp, of Bethel, N. D., has moved to Winter, N. D., where he will practice in the future. He is taking the place of Dr. Smith, who is moving to Antioch, Illinois.

At the meeting of the physicians and surgeons of Waseca County, held December 27, Dr. J. J. O'Hara was elected president and Dr. Saliterman, also of Janesville, was elected secretary.

Dr. Robert D. Alway, of Aberdeen, S. D., died recently after several months illness. Further notice of Dr. Alway appears in our editorial columns, and more will follow in our next issue.

Dr. L. F. Dugan, for the past three years a member of the staff of St. Mary's Hospital, Minneapolis, has established offices at 202 Paramount building, Faribault, for the practice of medicine

Speakers on the program for the midyear meeting of the North Dakota Academy of Ophthalmology and Otolaryngology in Fargo, were Dr. G. A. Larson, of Fargo, and Dr. J. P. Miller, of Grand Forks.

The new hospital for the Federal Indian School at Flandreau, S. D., is practically completed. The hospital building has three stories and contains 38 rooms, and will cost approximately \$35,000 when finished.

Dr. H. N. Hovde, of Duluth, Minn., died December 24. Dr. Hovde received his medical education at the University of Oslo, Norway. He came to the United States in 1899, and has practiced in Duluth since 1900.

Dr. S. H. Berens, of Sioux Falls, S. D., entered the Clinics of Drs. Swift and Flothaw, well known surgeons of Seattle, Wash., on January 1, according to word received from that city. Dr. Berens will specialize in neurological surgery.

Dr. Erling W. Hansen, 4515 Drexel Avenue, Minneapolis, has returned from a four months' stay in Europe. While there he attended the International Congress of Ophthalmology in Amsterdam and took a postgraduate course in Vienna.

Dr. I. C. Riggin, executive secretary of the American Heart Association, gave an address at the Annual Secretaries Conference of the Minnesota Medical Association, which opened at St. Paul, January 11. Dr. E. A. Meyerding, executive secretary, presided.

Dr. C. C. Hoagland of Madison, S. D., left a few days ago for New York and will sail on the Bremen for Europe. He plans to spend about three months abroad and will attend clinics in Vienna, Berne, Munich, Edinburgh, Dublin and London. He expects to return sometime in April.

The resignation of Dr. Arthur A. Law, Associate Professor of Surgery, University of Minnesota, was received by the Regents, who voted to draw up a resolution commending Dr. Law for his work in the Medical School where he had been a faculty member for thirty-five years.

Dr. C. W. Giesen was elected chief of staff of St. Mary's hospital at Duluth. The following officers were also elected at the same meeting: Dr. John Baird, vice-president; Dr. M. H. Wall, secretary; Drs. W. H. Schnell and J. W. McGill were elected members of the executive committee.

The Yankton District Medical Society elected the following new officers and directors: Dr. G. R. Albertson of Vermillion, president; Dr. F. A. Moore of Yankton, vice president; Dr. J. A. Hohf of Yankton, secretary and treasurer; Dr. G. S. Adams of Yankton, member of the board of censors.

Dr. C. M. Adkins, of Grygla was elected president of the Red River Valley Medical Society at their annual meeting. The following other officers were also elected: Dr. H. Holte, Crookston, vice-president; Dr. C. L. Oppgaard, Crookston, secretary-treasurer; Dr. H. M. Blegen, Warren and Dr. O. E. Locken, Crookston, were elected delegates to the convention of the state medical society.

At the annual meeting of the North Dakota Tuberculosis Association, which was held at Bismarck, the following officers and directors were elected: Dr. Fannie Dunn Quain, Bismarck, president; Dr. B. K. Kilbourne, Fargo, vice-president; Miss Minnie J. Neilson, Valley City, recording secretary; and Dr. R. S. Towne, Bismarck, treasurer. Miss Helen Katen, Bismarck, was continued as executive secretary.

Dr. Paul F. W. Wiperman, a graduate of the University of Minnesota, and well known in Minneapolis, died January 2, in New Orleans. His death was due to a very rare form of blood poisoning, in which he had specialized, and for which he had discovered a treatment. Dr. Wiperman had attempted to treat himself, but was unsuccessful.

Dr. Joseph Sorkness was elected president of the Stutsman County Medical Society of North Dakota at their annual meeting held at the Jamestown Clinic recently. Other officers elected were Dr. A. W. Melzer, of Woodworth, vice-president; Dr. T. L. DePuy, secretary, and Dr. F. O. Woodward, delegate to the State meeting at Bismarck.

Pierre, S. D., is to have a new \$250,000 St. Mary's Hospital, the construction of which will start early in the spring. The new building will be a fireproof structure, and is expected to be ready for occupancy next October. The contract was signed at Sacred Heart convent, Yankton, headquarters of the Benedictine Sisters, who are financing its construction.

CLASSIFIED ADVERTISEMENTS

Exercising Machine for Sale

Exercising machine never been used will be sold for half of list price. Address 669, care of this office.

Practice for Sale

Country practice for sale in Eastern South Dakota. Good reasons for selling. Address 681, care of this office.

Physician Wanted

Resident physician wanted for Eitel Hospital, Minneapolis. Salary and maintenance. Write or call Dr. H. E. Stosel, Supt., Eitel Hospital, Minneapolis.

Position Wanted

A young woman with hospital experience wishes position in doctor's or dentist's office. City references. Call Walnut 1588, Minneapolis, or address 679, care of this office.

Ultraviolet Ray Lamps for Sale

Three Ultraviolet Ray Lamps, one Infra-Red Lamp. All brand new and will be sold at half price. Description and prices can be had by addressing 668, care of this office.

Position Wanted

Woman technician desires position. Experienced in clinical laboratory, X-ray, physiotherapy, metabolism, and anesthetics. Very efficient and dependable worker with initiative. References furnished. Address 680, care of this office.

Complete Office Equipment for Sale

For sale in Minneapolis, complete office equipment. May continue in present office location as is. Reason for selling—I am taking Fellowship. For further details write Dr. J. K. Moen, 2700 E. Lake St., Minneapolis, or phone Dupont 5340.

Wanted a Physician to do Laboratory Work

in payment for office rent in central district of Minneapolis, also will refer some work in general practice. Opportunity to assist in surgery will be given. Give references, age, school, and hospital of internship. Address 671, care of this office.

Fur Coat for Sale

Man's genuine muskrat lined overcoat. Black wool shell, Persian lamb collar, lining made entirely of heads of muskrats. Size 42. Will sell for \$125 for immediate disposal. For further information call mornings or write Apt. 615, Oak Grove Hotel, Minneapolis. This coat must be seen to be appreciated.

Offices for Rent

Two fine Office Rooms with a combination waiting room in the best corner location in town. Building exclusively occupied by doctors for over ten years. Offices are steam heated. Hot and cold water and janitor service. Fine opportunity for a new graduate. Address N. Greengard, Mandan North Dakota.

(Book Notices continued from page 44)

correlated. It is shown how, in one disease, two or three types of treatment are fitted together.

The book is very well indexed and the remarks are concise and to the point so that it is very easy to obtain the important treatment and case management in a very short time, for all the common and great many of the rare diseases.

—ADAM M. SMITH, M.D.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 13, No. 1. (Boston number, July, 1929). Octavo of 280 pages with 36 illustrations. Per clinic year, July, 1929 to May, 1930. Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Co., March, 1929.

This volume represents the Boston contribution to the Medical Clinics. There are many interesting articles, including a paper on "Diabetic Coma" by Dr. Elliott P. Joslin, a discussion on "Diaphragmatic Hernia" by F. T. Lord, a discussion on "Subacute Bacterial Endocarditis" by Dr. Louis J. Ullian and a paper by R. S. Palmer and H. B. Sprague on "Four Cases Illustrating the Untoward Symptoms which may be produced by the use of Potassium Sulphocyanate in the Treatment of Hypertension." In this discussion there were two patients in which the drug caused uncomfortable weakness and two cases in which the drug appeared to produce angina pectoris. The symptoms in the patients here reported seemed to be due to the lowering of the blood pressure rather than to any toxic effect of the drug, which is in many instances a very useful therapeutic agent.

Many other papers go to make up a most profitable volume.

—A. E. CARDLE, M.D.



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STUDY OF DIFFERENTIAL DIAGNOSIS OF HEAD PAIN

By C. D'A WRIGHT, M.D.

MINNEAPOLIS, MINNESOTA

In the etiological classification of head pain it is impossible to sufficiently emphasize the necessity of concentration on the part of the patient while careful statements are recorded of the anamnesis, personal habits, occupation, site of pain, kind of pain, onset and duration of pain, the way the trouble first appeared and how it has progressed with record of treatment to date,

Before a diagnosis is reached it is often necessary to make a most exhaustive study even to "brain X-ray after air inflation of the ventricles." (Fig. 1.)

For purpose of convenience we have classified head pain into five groups:

First—Those due to ametropia, muscular imbalance and morbid conditions of the eye.



Fig. 1

and benefit, if any, that was received therefrom. It is also necessary in many cases that these statements be corroborated by others who have observed the phenomena.

Second—Those due to abnormal sinus conditions and ganglionic disturbances.

Third—Those due to diseases involving other structures of the head: brain, meninges, etc.

Fourth—Migraine.

Fifth—Those due to other pathologic disturbances, not classified above.

Class 1.—It is well to consider some anatomical facts having a direct bearing on some special forms of head pain.

The four recti ocular muscles arise from the apex of the orbit around the bony circumference of the optic foramen. The superior oblique arises from the inner margin of the optic foramen and runs forward upon the upper and inner wall of the orbit as far as the trochlea. The trochlea lies behind the upper and inner margin of the orbit (posterior to Ewing's point). In its first directional journey it covers the thinnest portion of the orbital cavity. (Knowledge of these anatomical relations is of value in considering asthenopias, combined with frontal sinus vacuum headaches where no nasal symptoms exist and where no pathology is found in the frontal sinus except closure.) The diagnostic symptom is low grade, constant headache, made unbearable by use of the eyes. The sensitive thin wall of the orbit is made painfully irritable by the use of these eye muscles. (See Fig. 2.)

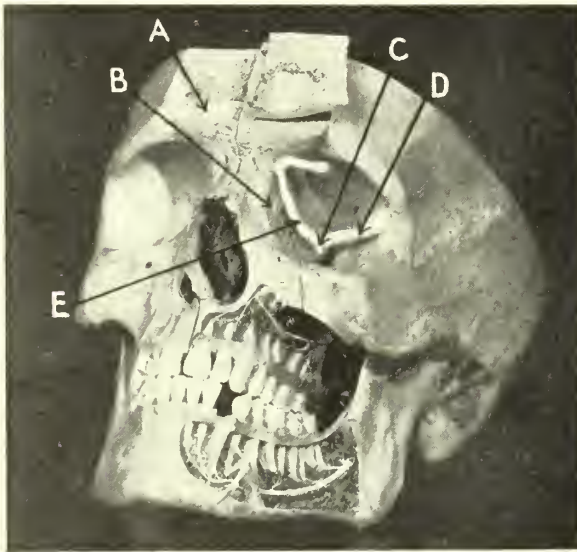


Fig. 2

Probably the accompanying Fig. 2 will bring more fully to mind the fact of the proximity of the sinus to the orbital canal. "A" shows the left frontal sinus open. "B" shows the thin, bony wall which exists between the orbit and the ethmoidal cells. "C" shows the point of entrance of the optic foramen. In this specimen, the external rectus muscle, "D" has been left intact and rolled in cotton to emphasize its rec-

tus. "E" shows the superior oblique as it runs from its origin near the upper and inner wall of the optic foramen to pass through the trochlea and be inserted in the sclera, under the superior rectus muscle. The end is cut off, and being wound, shows round instead of flat in this diagram. The artificial trochlea has been moved forward about 3 mm. so that the pulley may be better shown and also to give the natural depth relation of the optic foramen to the anterior surface of the orbit. The other three recti muscles have been removed.

In 1900, Ewing first diagnosed this type of headache and located Ewing's spot near the covering of the trochlea; tenderness of this spot has since been designated as Ewing's sign.

Anterior ethmoidal involvement often gives tenderness at the site of the lachrymal bone with burning of the eyes and pain located back of the eyes. Posterior, ethmoidal and sphenoidal sinus involvement give rise to frontal, parietal and occipital headaches and these are accentuated by the use of the eyes due to the proximity of these sinuses to the thin orbital walls but they are not accompanied by Ewing's sign.

Unless one is quite familiar with surgery of the eye-ball, he seldom has the correct knowledge of the size and strength of these muscles. It is not uncommon to tenotomize an internal rectus muscle that is 2 mm. across and at its tendonous attachment often 3 mm. or more.

When an infected sinus exists or when a hyperplasia of the surrounding bony tissue, following sinus infection, is present, it is easy to understand how muscular action of the four rectus muscles and the two oblique may be the only cause of severe asthenopia, following the use of the eyes, especially for near work. A case of this kind, having three dioptries hyperopia when corrected, may have relief from headaches, which reappear with extreme severity as soon as the eyes are called upon to put in action these six muscles.

Seldom misjudged is the cramping pain from photophobia with the characteristic symptoms of blepharospasm and sneezing, due to the tiring of the ciliary and extra ocular muscles, caused by the visible rays. This pain cannot come from the choroid, the retina, or the optic nerve as they contain no sensory fibres, sensory fibres being contained only in the anterior portion of the ciliary body, iris and conjunctiva.

Pain from conjunctival inflammations is more burning and severe, sharp pain pointing to corneal involvement. Pain from corneal and scleral lesions is felt only in the eye-ball itself.

Pain from inflammation of the uveal tract and from increased tension in the eye-ball is as severe as any pain possible; capable of exciting symptoms of brain irritation. It is often described as intense pain in the teeth, cheek, or frontal bone. It comes in periodic attacks with a predilection for early night hours and so clearly resembles the clinical picture of true neuralgia that only the recognition of the morbid eye conditions excludes the diagnosis of that disease.

Pain from prodromal glaucoma increases in frequency as time goes on, is more frequent in cold weather and ceases when sleep occurs. The vision at such times is dull and rainbow rings are noticed around lights. These symptoms appear during early exacerbations of the disease. The day following objective examinations shows nothing except that slight pressure on the eye-ball causes arterial pulsation in the retina and the anterior chamber generally appears at least questionably more shallow than normal.

Pain, if entirely from refractive error is generally worse after prolonged visual effort; most common during adolescence from severe application to study and body changes of that period; next, most common after forty-five, due to lack of correction of increasing presbyopia. Small and medium amounts of the different varieties of ametropia show a greater percentage of pain than extreme cases.

Generally, pain from ametropia, while troublesome, is not of extreme character, and, when not accompanied with muscular imbalance, or other genesis, seldom produces vertigo, body or face spasm, digestive disturbances or interference with general nutrition. It is moderate, and in the eyes or connected with the frontal region. In painful accommodative inertia, as well as spasm of accommodation from excessive near work with poor illumination, the pain is sensed in the eye-ball.

Unequal accommodation from difference in the strength of the ciliary muscles in the two eyes, as well as from internal partial ophthalmoplegia (lues, tabes, rheumatism, trauma, or poisoning) gives pain in the eye-ball. This pain frequently appears clinically because the tyro tests the "plus on" glass of both eyes for presbyopia at the same time, instead of finding the suitable glass for near work in each eye separately and then harmonizing them.

This mistake in refraction, as well as too much correction in young hyperopes, is the cause of much avoidable pain.

Inequality of accommodation is generally associated with anisocoria per se. Unequal accom-

modation caused by unequal rigidity of the lens due to more rapid advancement of sclerosis in one lens than in the other often leads to improper correction of presbyopia with resultant pain.

Pain in heterophoria and strabismus is often severe and accompanied by head tilting, diplopia, vertigo, deviation, amblyopia and severe pain which may be orbital, supra-orbital, temporal, or occipital, and even in remote regions.

Nausea and vomiting and general nutritious disturbances may follow from this cause.

The muscular asthenopia resulting from efforts to prevent deviation often happily cease after actual deviation occurs and a diagnosis is easily made as pain ceases when one eye is covered for a time.

Pain from errors of refraction ceases with the correct fitting of glasses, if ametropia is the only cause.

In young presbyopes care should be taken not to eliminate too much of the range of accommodation. Always give as sparingly as is practical older presbyopes who show marked convergence insufficiency. The latter suggestion will eliminate much trouble from people who state that their reading glasses draw and give them unbearable pain. Remember that the weakest glass or combination that gives normal visual acuity is the correction of myopia.

The head pain of heterophoria and squint are often cured with the proper fitting of glasses, though muscle exercises and surgical procedure are sometimes demanded.

Muscle exercises have their uses. Exercises of fixation in strabismus do not succeed if the squinting eye is quite amblyopic. (Vision less than 20/60.) Nothing is more farcical than to bandage the good eye of a child at one daily meal, allowing only the use of an eye already quite amblyopic. Reading with the poor eye, when practical, (when the child is old enough) is the best exercise.

For squint that develops in early life much can be done by educating fusion with the use of the stereoscope or with an amblyoscope. These instruments, by compelling the eyes to act in unison, educate the fusion faculty. Adjust the instrument to the child's squint angle at first and by repeated re-adjustments, the child is taught to look into the instrument with eyes increasingly straighter. This educates fusion and is a muscle exercise at the same time, and one that will benefit.

Class 2.—The sphenopalatine ganglion or Meckel's ganglion is a small triangular body in the upper part of the pheno-maxillary fossa. It

consists of an interlacing of fibers with neurones from the sympathetic system.

"In the efferent nerve mechanism are pre-ganglionic and postganglionic fibers, the latter directly exciting the epithelium of the glands to activity, and the relaxation of the muscle fibers of the blood vessels; they originate in the sphenopalatine ganglion. The otic, sphenopalatine ganglion and submaxillary ganglion are associated with the trigeminal nerve but are not a part of it. They belong to the automatic system and are neither sensory nor motor. They emerge from the sphenopalatine ganglion fibers, pass to the glands and blood vessels of the mucous membrane of the nasal chamber, palate and pharynx. The ganglion cells, although irritable, are without automatic action and must be excited by impulses discharged by nerve cells in the central nervous system, and transmitted by way of the pre-ganglionic fibers which take their origin in the nerve cells in the gray matter beneath the floor of the fourth ventricle and pass forward, emerging from the medulla between the seventh and eighth nerves as the pars intermedia or nerve of Wrisburg and accompany the facial nerve as far as the geniculate ganglion. The fibers then pass forward as the great superficial petrosal nerve to the sphenopalatine ganglion. Thus nerve impulses discharged from the

central nervous system are transmitted by way of the sphenopalatine ganglion and in turn are relayed in a peripheral fan-like manner to the glands and arterioles of the mucous membrane lining the nasal chamber. Animal experimentation has demonstrated that stimulation of the peripheral end of the great superficial petrosal nerve causes a discharge of secretion in the nose accompanied by a dilatation of the vessel walls. At the junction of the great petrosal nerve and the internal carotid arteries a few sympathetic fibers become associated with it. The pre-ganglionic fibers start in the vasoconstrictor center under the floor of the fourth ventricle, descend to the spinal cord, and pass out in the ventral roots through the upper thoracic region and thus reach the peripheral chain of the sympathetic ganglion and pass up to the superior cervical ganglion. In this way a circuitous pathway is formed be-

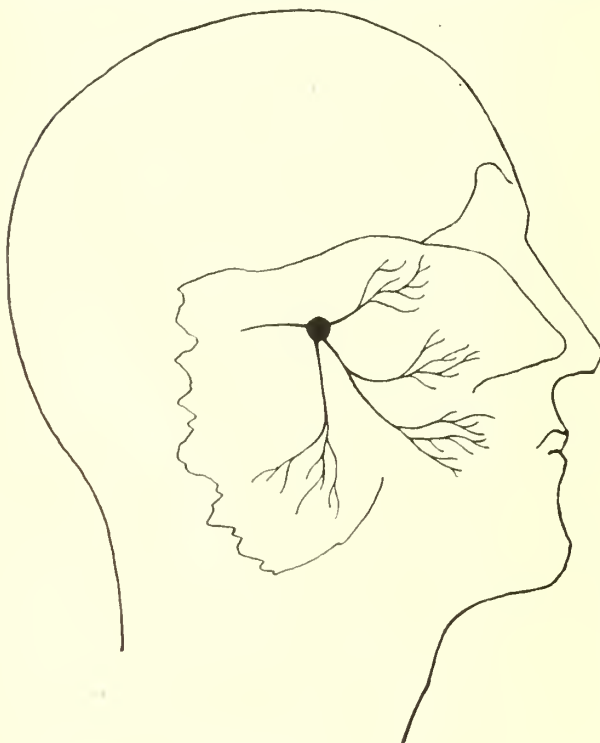


Fig. 3
Sphenopalatine ganglion and nasal branches.

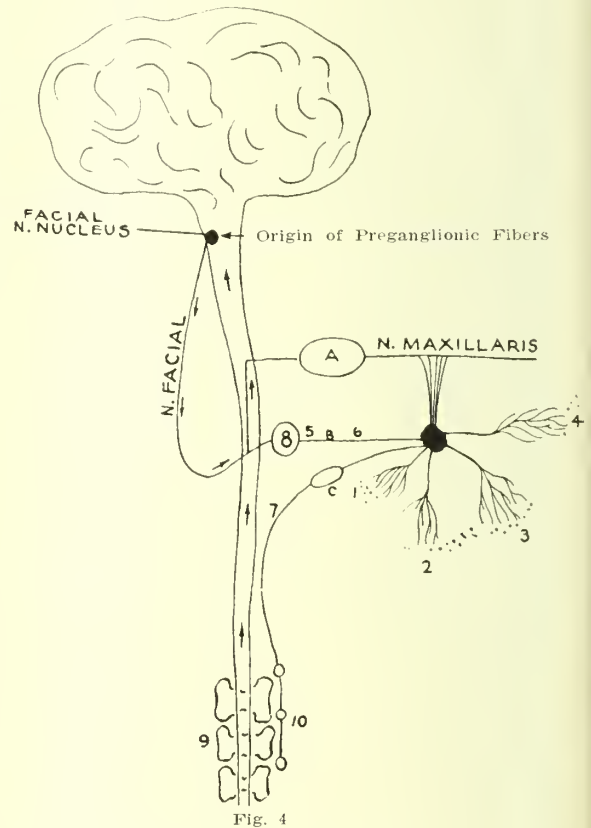


Fig. 4
Path of impulses from central nervous system (cord or brain) shown by arrows.

Schema—showing connection of sphenopalatine ganglion.
A. Sensory root. B. Motor root. C. Sympathetic root.

1. Pharyngeal branches.
2. Palatine branches.
3. Nasal branches.
4. Orbital branches.
5. Great Superficial Petrosal Nerve.
6. Vidian Nerve.
7. Great Deep—Petrosal Nerve.
8. Geniculate Ganglion.
9. Cervical Vertebra.
10. Cervical Ganglions.

tween the vasoconstrictor center and the blood vessels of the nasal mucosa, and it can readily be seen that the blood supply of the nose is thus under control of the vasoconstrictors and vasodilators of the brain. The nerve cells of the vasodilator and vasoconstrictor group have a certain tonicity which may be altered by nerve impulses transmitted from the nasal chambers to the trigeminal and from the skin. They may also descend from the cerebrum in response to psychic states of an emotional nature. The sphenopalatine ganglion is the most superficial of all sympathetic ganglia." (1) (See Fig. 3)

Hence, impaired nutrition, impaired central tonicity and peripheral disturbances may produce untoward symptoms in the nerve distribution of these centers showing sympathetic phenomena (sneezing and lacrymation) or by painful reaction.

Inflammatory and septic conditions in the region of the ganglion produce severe pain, neuralgic in character.

The symptoms of sphenopalatine ganglion irritation vary from sneezing and lacrymation (sympathetic group) to mild or severe head pain of a neuralgic character. Different pollens notably produce the former symptoms.

"Severe infection is followed by pain that starts around the eyes and radiates to the temples, occiput, neck, shoulder, elbow, and down to the finger tips. The teeth feel elongated. There is often nausea. Sometimes regurgitation of food, but seldom vomiting. The head pain lasts from a few hours to a few days and returns at different intervals for years, without serious impairment to the general health." At the height of the attack there is intumescence and hypor or hyper-sensitiveness of the mucous membrane of the upper nares. It is often confounded with true migraine, easily differentiated by the application of cocaine to the ganglion which dispels the pain from the sphenopalatine ganglion while having no effect on pain from central lesions, of the maxillary or Vidian nerve trunks. (A good point to note before injecting.)

Pain from anterior ethmoidal infections usually starts around the nasal portion of the maxillary bone and in severe cases is referred to the forehead between the eyebrows, rarely to the orbit. It is not increased by use of the eyes. It is steady without severe exacerbations and thus differentiates itself from the pain of frontal sinus suppuration. Again, application of cocaine to the anterior ethmoidal nerve at the upper anterior limit of the nares relieves anterior ethmoidal pain.

Pain from post-ethmoidal and sphenoidal infection is less sharp than pain from sinus infection. It is often accompanied by a feeling of fullness and pressure and often followed by remote pathologic changes due to hyperplastic bone changes in the region of the posterior ethmoidal and sphenoidal sinuses. Pains resulting from these hyperplastic bone changes last for years and are very hard to relieve. Optic nerve disturbances often follow as a result.

Acute frontal sinus infection pain is severe and usually constant until drainage is effected, after which it is comparatively slight with marked, severe morning exacerbations.

Maxillary sinus pain is of low grade character and generally, in acute cases, easily diagnosed from tenderness existing in the region of the cheek over the maxillary sinus and by the use of the sinus lamp.

Class 3.—Pain from acute otitis media is reasonably constant with sharp variations, especially in childhood. It is accentuated at night and during the second day tinnitus is added. By this time the severe night pain continues into the day. Deafness complicates (from liquid in the tympanum) and some outward bulging of the lower posterior quadrant appears. This pain is differentiated from the pain of myringitis by the symptom of deafness. If the drum is not opened or does not rupture, the pain becomes terrific and there is often slight facial palsy with tenderness over the mastoid. Deafness of the middle ear is very pronounced, yet bone conduction is good, except when the tension is so great that the base of the stapes is forced into the oval window or the infection is so virulent that it reaches the internal ear.

Some cases suffer out of all proportion to the severity of the disease, particularly when the tympanic plexus is affected or often when there is a peculiar involvement of the fifth or occipital nerve. Chronic otitis media sometimes exhibits more or less of the pain symptoms of the acute stage of the disease. Rarely, cavernous sinus infection complicates, through the petrosal sinus to the cavernous sinus, which may give severe neuralgias, optic nerve edemas, inflammations with paresis or paralysis of the first branch of the trifacial, the abducens, trochlearis or motor oculi. In these cases ptosis, convergence and ipsilateral large pupils have been observed where probably a mural thrombus of the cavernous sinus has occurred. Rarely a cavernous sinus thrombosis proper occurs when in addition to the resultant paralyses, there will always be chemosis, protrusion of the eye-ball with im-

mobility.

Pain at the tip of the mastoid, if continuous, is a fairly reliable sign of mastoid inflammation except in tubercular or syphilitic types, neurasthenia, or in diabetes.

Extra dural abscess pain following mastoid disease is a severe, temporal, nocturnal pain. (III)

"In a large percentage of cases of brain tumor, head pain is an early sign. Pains are irregular, at first, and become more persistent and severe. If dull, marked excruciating exacerbations occur. There are diurnal variations. Emotional excitement or anything that increases intracranial pressure often produces vertigo, vomiting or comatose confusions. Head pain is often one-sided in early stages, particularly in basal and pituitary lesions and in neuro-fibromata.

"Pain from cerebellar tumors is more diffuse. It may, or may not, be localized. Local tenderness, percussion or X-ray shadows are very important, confirming diagnosis.

"Frontal tumors give occipital head pain and vice versa. Right-sided tumors make left-sided head pain and vice versa, but the greater majority are ipsilateral." (IV)

Trigeminal neuralgia often accompanies tumors in the cerebello-pontine angle. In each case of tumor in the cerebello-pontine angle that the writer has seen there has been pain accompanied by most severe exacerbations in the morning with nausea, vomiting and vertigo.

Tumors causing pressure in the superior cerebellar peduncle or its incoming pathways cause nausea, vomiting, and a tendency to fall in one direction. The writer has never seen a cerebello-pontine angle tumor with contra-lateral pain.

Localized tenderness, if present, is a valuable sign.

Class 4.—Migraine or sick headache. Migraine is a family disease, often characterized by an aura, slightly less than that of minor epilepsy, too well recognized to require much differential study. It recurs at intervals of days or weeks, mild cases appear in the morning and disappear in the evening, while severer attacks continue several days. There are often unilateral vasomotor disturbances during the attacks. It is often preceded by a visual aura in the form of scintillating scotoma in one-half of the visual field, usually on the opposite side of the unilateral headache, but often seen in homonymous parts of both visual fields. Subjective sensations are present and often slight aphasia. The deliberation of the aura marks it from the aura of minor epilepsy, as well as the absence of unconscious-

ness and clonic movements. In migraine, intense pain over the maxillary sinus, not unilateral, is often present.

Migraine ophthalmoplegia is rare, and, as the name indicates, the syndrome is similar to ordinary migraine. There is often ephemeral paralysis of the third nerve (ipsilateral) with eye symptoms due to the paralysis. The most common observation is ptosis and divergence.

Class 5.—The last group considered must include a short word picture of a rather protean class. Tic douloureux easily comes first in point of severity of pain. The attack is seldom through all the divisions of the trigeminal nerve, supra-orbital being the most common and least severe. The pain is agonizing and so well understood as to need little study. The picture is one of red, watery eyes, running nose, and involuntary muscle spasm of the affected side with extreme pain.

"It is never bilateral except in diabetes." (V)

Paroxysms occur spontaneously and are often provoked by the slightest external stimulus. Nerve tenderness over their foramen of exit is characteristic.

The removal of focal infection is, of course, the great therapeutic idea. Local anesthetics point to neuritis rather than neuralgia.

Pain from herpes zoster (a disease of the posterior root ganglion) is quite impossible, at times to classify, until the eruption occurs. When this latter occurs on the cornea, the suffering is considerable.

Neurasthenic head pains are generally of low grade and usually distinguishable by their disappearance when some other cause attracts the attention of the patient, reappearing when the stimulus is withdrawn or when useful to the patient.

The occipital pain of hysteria is easily distinguished by its intensity and the hysterical syndrome.

Head pain in diabetes should be classified as a functional nervous disturbance due to faulty metabolism, especially of carbohydrates and fats.

Headaches in chronic secondary anemia are from inanition or the intoxications producing the anemia. In chlorosis they may be classed among the neuroses, and who will say that Addison anemia headaches are not the same.

Head pain in acute diseases, small pox, pneumonia, typhoid, and the like, must be classified as toxic in origin.

Head pain from constipation. The writer thoroughly believes that the constipation headaches are due to sympathetic system disturbances and not to the much touted intestinal toxemias.

A. E. Spear, Dickinson; alternate, R. B. Radl, Dickinson; counsellors, Selie Moske, New England, and Oscar Smith, Killdeer. The secretary reported a successful year with the largest membership in the history of the organization. During the year we have lost one member, Dr. George D. Crossette, of Richardton, now located at Starbuck, Minn.

An expeditionary party to conduct archaeological work in North Africa will sail from New York, January 29, under leadership of Dr. Albert E. Jenks, chairman of the department of anthropology at the University of Minnesota. Announcement of these plans was made jointly today by Dr. Jenks and the Minneapolis Institute of Arts. The expedition will be carried on with the co-operation of the Logan museum of Beloit College, at Beloit, Wis., which is headed by Alonzo W. Pon, assistant curator. Excavations in the pre-historic shell-heaps of Algeria will be conducted during the months of March, April and May. Will return in the fall.

Dr. Jay A. Myers, associate professor in the Department of Preventive Medicine and Public Health, at the University of Minnesota, attended two meetings of the National Tuberculosis Association, January 23 and 25. Dr. Myers left Tuesday, January 22, to meet with the Early Diagnosis committee of the National organization, which meets each year to plan for the nation-wide campaign carried on each spring. Dr. H. D. Chadwick, of Boston, also met with Dr. Myers and the Early Diagnosis committee. Both men serve as advisors to the committee. As a member of the Board of Directors of the National organization Dr. Myers will sit in on the board meeting, January 25.

The mid-year meeting of the North Dakota Academy of Ophthalmology and Oto-Laryngology was held at the Chamber of Commerce in Fargo on January 11, Dr. Geo. M. Constans, of Bismarck, presiding. An excellent dinner was served at 6:30 P. M., after which the following program was presented. "A biographical sketch of Sir Wm. Paget Bowman," by Dr. W. R. Winn, Fargo; paper, "Observations on the pathology and diagnosis in chronic maxillary sinus disease," by Dr. G. A. Larson, Fargo. Case reports: "Optic atrophy" (in children), by Dr. J. P. Miller; "Lupus vulgaris with keratitis;" "Agranulocytic angina;" "Pemphigus," by Dr. Constans, Bismarck; address, "Hearing problems and the use of the Audiometer," by Dr. Horace Newhart, Minneapolis. The papers were presented with slide illustration and brought forth much inter-

esting discussion. Resolutions of endorsement were passed for the periodic examination of the acuity of hearing in the school child. Dr. Newhart was elected to honorary membership in the Academy and the following doctors to active membership: Arthur Joistad and Trygve Oftedal, Fargo; Henry O. Ruud, Grand Forks; L. G. Smith, Mandan.

Women's Auxiliary of the South Dakota State Medical Association

This organization had its beginning at the twenty-ninth annual session, held at Hot Springs, South Dakota, September 27-28-29, 1910. Mrs. Jennings, wife of Dr. R. D. Jennings, organized an auxiliary at an afternoon tea given by the physicians' wives at Hot Springs, the wives of the visiting physicians co-operating in the organization.

The object of this organization was to be helpful in the line of Public Health programs for the State. Scientific medicine needs the co-operative aid which can come through such auxiliaries. What makes for better understanding among physicians and their families make for better co-operation in any programs that organized medicine may promote. Now days women's clubs exercise a strong influence on civic affairs. The families of physicians have a neutral interest in Public Health problems, and in the auxiliary they may co-operate with lay organizations in the proper direction of such efforts.

At the annual session held at Mitchell, May, 1929, the auxiliary adopted a new set of by-laws making possible the organization of local chapters in each component medical society in the state. The basic rules which were laid down for state and district organizations make it possible for work to be carried on without friction, with great advantage to the aims of organized medicine in all organized Public Health programs.

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in payment for office rent in central district of Minneapolis, also will refer some work in general

practice. Opportunity to assist in surgery will be given. Give references, age, school, and hospital of internship. Address 671, care of this office.

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Immediate relief from a single bowel movement could scarcely follow, were toxemias the cause. Except in cases where the constipation is due to other systemic disease, or is obstructive in origin, they should be classified in the neurasthenic list.

Head pain with pallor of the face due to angio-neurotic vasomotor spasm of the cerebral vessels and relieved by exhibition of the nitrites, is readily classified; as is the head pain accompanied by arterial hyperemia, flushed face, and throbbing arteries, with or without essential hypertension, easily relieved by blood letting.

"Nephritic headaches, due to retention of metabolites or to hypertension, which accompanies the disease, are classified by the recognition of the kidney lesion." (VI)

"Head pain from hyperthyroidism is severe and frequent and due to hypercirculative conditions in the brain from thyroid toxicosis." (VII)

Review of a long series of cases, indexed ophthalmic goiter, extending over thirty years' observation, does not permit the writer to list head pain as a significant symptom of that disease.

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LEGEND

Fig. 1. Courtesy of Dr. J. Frank Corbett.

The cases submitted for your observation in each of the following classes have been reported as briefly as possible, except the one case, J. M. R., under class V. A detailed report of any case shown will gladly be given upon request. Much time and space is saved by thus abbreviating.

Under class No. 1, Case No. 1, C. J. D., male, age 14 years, occupation, school. Patient says, "I am perfectly well during summer vacations. During school I am much troubled with headaches which are worse in the afternoon than in the morning, and are somewhat, if not entirely, relieved by the week-end rest."

Vision, both eyes, 20/20. Refraction, under mydriatic, showed the following: O. D.—Vision 20/100 plus .50 sph. plus 1.00 cyl. ax. 180. Vision 20/20. O. S.—Vision 20/100 plus .75 sph. plus 100 cyl. ax. 180 Vision 20/20. Muscles were normal. Full correction of astigmatism was given with one-third farsight. Headaches disappeared and have not bothered whatsoever since Nov. 10, 1929.

Class No. 1, case No. 2, J. N., female, age 6 years, occupation, school. Vision in both eyes 20/20. Marked convergent squint with more or less frontal headaches. Skiascopic refraction showed plus 8.00 sph. in both eyes. A plus 4.00 sph. was given and

rapidly increased to plus 6.00 sph. Headaches and convergence disappeared.

Class No. 1, Case No. 3, L. F., female, age 12 years, occupation, school. Symptoms, headaches, severe in the evening which were followed by vomiting and severe headache in the morning upon rising, when studying had been done during the previous day. Sunday and Monday mornings there was marked relief from these symptoms. Vision, both eyes Refraction, under mydriatic showed the following: O. D.—Vision 20/60 plus 1.25 cyl. ax. 60. Vision 20/20. O. S.—Vision 20/60 plus 1.25 cyl. ax. 120. Vision 20/20. There were twelve degrees of exophoria. Correction of astigmatic error was first made with no result. A few months later muscles were operated on to relieve the exophoria. The result immediately after the operation was one degree esophoria. There was complete relief from headaches, nausea, and vomiting after the operation. Three years later there was one degree of exophoria but not return of pain.

Class No. 2, Case No. 1, R. B. C., male, age 57 years, occupation, bookkeeper. Oct., 1921, symptoms were headaches of neuralgic character, worse after work. For some months the right side of his nose had been obstructed after head colds. Vision, both eyes 20/30. Refraction, without mydriatic showed the following: O. D.—Vision 20/40 plus 1.00 sph. Vision 20/20. O. S.—Vision 20/40 plus .65 cyl. ax. 1.35. Vision 20/20. Patient was advised to wear bifocal glasses correcting his far-sight and presbyopic added for reading. He could not use his bifocal glasses and discarded them and was given reading glasses only. We advised him to allow us to examine his sinuses which, at that time, he did not allow us to do. Seven years later, Jan., 1928, he returned, stating that during the interim he has had his glasses strengthened but had suffered from serious head pain with difficulty in breathing and nasal discharge. He said he had suffered quite severely from head pain since the time of his first visit. Examination of the nose showed large polyp on the right side with free pus, and he underwent an exenteration of ethmoid cells, anterior and posterior, and the sphenoidal sinus was also curretted and washed. Later the patient reported freedom from pain, improvement in health and increase in weight.

Class No. 2, Case No. 2, C. A. T., female, age 52 years, occupation, housewife. December 15, 1915, patient complained of severe headache which sometimes lasted all night. She said that the pain was on the left side of the face and was felt in the teeth and left jaw. Vision, both eyes, 20/100. Refraction, under mydriatic showed plus 2.00 sph. in each eye which gave normal vision. Correction for presbyopia was also given. Patient returned in 1921 to have glasses strengthened. Still had severe head pain. X-ray at that time showed nothing definite. Case ran along until May, 1927, when a diagnosis of chronic paranasitis was made. There were extensive adhesions between the middle turbinate and the septum which were severed and multiple polypi removed. There was pus in the anterior and posterior ethmoids with chronic pansinusitis. September 18, 1929, patient reported complete relief from head pain and nasal disturbance.

Class No. 3, Case No. 2, H. L., male, age 16 years,

occupation, school. First seen Dec. 14, 1929. History: Had influenza three weeks ago. Had headache and earache and discharge from left ear. Stayed home from school about one week, got better and returned to school for about a week. Ear discharged for several days. About five days before I saw him, vision began to fail in both eyes and in a day or two everything blurred. When he came in he had light perception in the right eye and could see 20/200 with the left eye. Pulse 84, temperature $101\frac{1}{2}^{\circ}$.

He had left discharging otitis media with apparent left mastoid infection; edema of both optic nerves and optic neuritis. The discs were gray, somewhat elevated and mushroom in appearance, edges somewhat blurred; pupils reacted three ways; no ocular paralysis. This was at 4:00 P. M., 12-14-29. Patient was sent to hospital for X-ray of mastoid, hemoglobin, differential blood count etc., with a tentative diagnosis of left otitis media and left mastoiditis; double optic edema and optic neuritis from genuine influenza.

There was a question whether the eye condition came from the mastoid infection or toxemia of the influenza. Patient was taken to the city hospital that night and I did not hear from him until the following evening when they said they had removed him from the city hospital and taken him to St. Mary's Hospital to which hospital I had given him a letter. Mastoids were X-rayed that evening and the diagnosis of mastoiditis was fully confirmed. His hemoglobin was not exceptionally low which, to my mind, ruled out coalescent type. His leucocyte count was 5,000. (Note leucopenia is an outstanding symptom of real influenza.)

On re-examination late that evening, Dec. 15, both pupils were completely dilated and did not respond to stimulus. There was no power of accommodation in either eye. There was some chemosis in both eyes and swelling of the lids of both eyes was very marked. The eye-ball was not immobile, however.

A complete left mastoid operation was done that night. All symptoms rapidly improved. On Dec. 17, the pupils began to respond to light slightly. On Dec. 21, the vision in the right eye was 20/200 and in the left eye 20/40. The changes in the fundi were correspondingly marked. Patient made an uninterrupted recovery with normal vision in both eyes.

This undoubtedly was a case going from middle ear to the mastoid, from the mastoid to the petrosal sinus, the petrosal sinus to the cavernous sinus, producing a mural thrombosis of the cavernous sinus which cleared up very quickly after the mastoid operation.

Class No. 4, Case No. 1, G. A. C., female, age 28, occupation, clerical work, May 10, 1916, patient presented herself complaining of headaches after close of work only. Said that headaches gave her stomach trouble and poor appetite. Vision, right eye, 20/30; left eye, 20/40. Refraction, under mydriatic showed the following: O. D.—Vision 20/50 plus .75 sph. plus .75 cyl. ax. .75. Vision 20/20. O. S.—Vision 20/70 plus .25 sph. plus 1.00 cyl. ax. 1.05. Vision 20/20.

A peculiar striation of the temporal side of the right fundus was charted. Eyes were sensitive to light and patient was given amber colored glasses

which were later changed to Crookes lenses. More or less headaches were complained of with history of grandfather having had severe, periodic headaches.

Patient reported at intervals complaining of the headaches; said they were of a one-sided nature (preceded by an aura) which lasted for some days during which time stomach upsets occurred. The pain was repeatedly referred by herself to her eye condition. She said that her eyes itched and hurt. There was contraction of the field which manifested itself along about 1918. September 22, 1927, patient came to the office complaining of eye and head pain, sick stomach and said that everything seemed cloudy when she awoke that morning and that she saw rainbow rings around lights. Slight pressure on the eye-ball produced arterial pulsation. The anterior chamber of her right eye was undoubtedly shallower than normal and shallower than the left eye. Her field of vision was contracted for white and colors, marginal cupping of the disc was somewhat questionable. She gained relief and quite decided relief by the use of myotics and a diagnosis of prodromal glaucoma was made. This case exhibits head pain from three causes: compound hyperopic, astigmatism, migraine and glaucoma.

I hope to be able to show one or two other cases of migraine, somewhat similar.

Class No. 5, Case No. 1, March 14, 1907, J. M. R., complains of severe headaches. Vision—O. D., 20/20. Vision—O. S., 20/20. Refraction under mydriatic showed the following: Vision—O. D., 20/40 plus 1.00 sph. Vision 20/20. Vision—O. S., 20/40 plus 1.00 sph. Vision 20/20. Blood pressure 90/200. Urine normal. Chronic interstitial inflammation of tonsils with hyperplasia, two or three acute attacks. Yearly advised tonsillectomy. It was not done. Patient did not report for a long time. In May, 1924, she came in saying headaches had continued severe during intermim and were getting worse and worse. Patient was bedridden most of the time and had tried to have tonsillectomy which was abandoned on account of hemorrhage. Had been too ill to be about for some time and had had two or three milds "strokes" not followed by permanent paralysis. Examination and laboratory findings were normal except blood pressure was 120/270; renal function not bad but definitely impaired; basic metabolism 12 per cent below Du Bois average. Diagnosis: essential hypertension, nephrocirrhosis arteriosclerotica, slight extrasystolic arrhythmia, uricemia but no gout in family. Cause: Infection from tonsils. I rayed the tonsils with bulk radium through neck wall, extracted 500 c.c. blood from median cephalic vein. Patient was given one grain of dried thyroid extract, t.i.d. and novatophan $7\frac{1}{2}$ grs. t.i.d. Diet containing 40 grams protein a day and 1200 calories daily; rest and massage. September 2, 1924, blood uric acid 2.4 mg. per c.c. of blood; blood pressure 110/230; patient had reduced thirty pounds. Patient gradually became better and is now well and has resumed regular domestic and social activities. August, 1928, blood pressure was 90/180. Patient still takes some thyroid. Without the use of radium on tonsils I believe this case would have died.

LUGOL'S SOLUTION IN THE TREATMENT OF INFLUENZA

BY J. J. HEIMARK, M.A., M.D.

FAIRMONT, MINNESOTA

Those of the medical profession who encountered the influenza epidemic of 1918, are, I am certain, unanimous in the wish that they may never again experience such a calamity. Cities, camps, islands and rural districts living their daily routines were suddenly overwhelmed by the inexplicable illness and death of persons heretofore apparently hale and hearty. The influenza epidemic had descended in all its ominous garb. I believe no other catastrophe, war terrors included, could have wrought such utter consternation as this devastating epidemic; and certainly not the high mortality.

Possibly no other disease since the epidemic of 1918 has received such universal investigation from the points of view of the various branches of medicine. Endless literature on the different phases of influenza is available; however, numberless phases of the problem remain as yet unsolved. The pathologist's post mortem during the epidemic revealed but the most meager findings. Neither did his microscopic study of the tissues throw any more enlightenment on the cause of the victim's death which frequently took place during 24-48 hours after the onset of the initial symptoms. Nor was the epidemiologist any more successful in explaining why completely isolated areas were as severely affected as those of more centralized location. The therapeutic and prophylactic phases were likewise given as thorough study as were the other phases of this disease. There is no doubt but what Dr. Rosenow's serum has a positive prophylactic and therapeutic effect in the early treatment of influenza.

Other therapeutic measures have not been very encouraging. Certainly nothing has been evolved that has acted as dramatically as have the serums in some other forms of disease. Rather has the treatment to date been expectant and supportive, even as it was in the devastating epidemic of 1918.

Since 1924, in the treatment of various types of disease I have employed the use of compound solution of iodine or Lugol's solution as a pre-operative tonic of several days duration on major surgicals. Among these have been hypertrophied prostates, gall-bladders, empyemas, hernias, (in elderly people) and pelvic conditions. In conjunction with other supportive medication

I have used Lugol's solution in the treatment of respiratory infections, bronchitis, pneumonia, tuberculous peritonitis, acute articular rheumatism and physical exhaustion in elderly patients. I have used Lugol's on surgical patients weakened by infection. I have also employed it in patients convalescing from pneumonia, typhoid, pleurisy, —both with and without empyema, osteomyelitis and puerperal septicemia.

After thus prescribing Lugol's for a couple of years, I was convinced that its action was decidedly beneficial. It was plainly apparent that the acutely ill, pneumonic, generally septic or infectious type of patient, became less toxic. The convalescing patient seemed to regain his strength more quickly. The old debilitated person appeared decidedly vitalized. The patient suffering from bronchitis bordering on a threatened pneumonia would, in as short a time as two to three days, rally almost unbelievably from his ailment.

In the winter of 1926-27 we encountered a rather severe epidemic of influenza in Fargo, North Dakota, as we did likewise this past year, 1928-29 in Southern Minnesota. During these two epidemics I saw a total of about 50 of these patients who felt they were ill enough to warrant having a physician called. The clinical symptoms and physical findings were characteristic. At both times I used Lugol's solution extensively in my treatment, plus additional medication if warranted, for example,—a sedative in cases of considerable restlessness and apprehension; an antiseptic gargle such as Dobell's solution for throat and tonsil infection, supplemented by a daily swabbing of the throat with a 5-10 per cent silver nitrate solution. The extensively inflamed sore throat, and upper respiratory tract irritation was especially noticeable during the 1928-29 epidemic. The cough, if annoying, was allayed by codein and ephedrine. Other routine measures such as could be carried out in the homes (where all these patients were cared for) were resorted to, such as forcing fluids, alkalis to combat acidosis, rest in bed, and ventilation of rooms.

The Lugol's solution was administered in doses of from 10-30 drops in milk, grape juice or water three times a day, the dose depending upon the severity of the infection. None of the

patients had been given any influenza serum previous to the onset of the disease, nor was it used during the attack. After 2-3 days improvement on the part of the patient, the larger dose of Lugol's was reduced to 10 drops three times a day. I had all the patients continue using 10 drops three times a day for a week to four teen days, depending, of course, upon the severity of the infection and the age of the patient. I had the elderly patients continue its use for at least two weeks, even though they were apparently over the attack.

There were no deaths in this small series, while there were likewise no untoward complications nor relapses. Since medical attention was resorted to it is fair to assume that these cases were among the more seriously ill in their respective communities. The first epidemic, that of 1918, taught the public there was little to be obtained from the medical profession in either the way of cure or in lessening the severity of the infection. One general rule, however, had, it appeared, been fairly mastered, namely, the importance of rest in bed and the liberal use of fluids from the onset of the first symptoms. Thus, when summoned for the more obstinately infectious cases, I immediately prescribed the use of Lugol's and any other necessary medication as previously described. From observation and findings I arrived at the following conclusions:

1. The toxicity was definitely relieved inside of 24 to 36 hours.

2. The moderate to severe prostration was likewise reduced inside of 24 to 36 hours.

3. In all cases where there were no complications (for example, follicular tonsillitis, quinsy, otitis media, pleurisy, broncho- or lobar pneumonia, severe bronchitis, pyelonephritis, cystitis, etc.) the temperature returned to normal in three days and remained normal. The fever in the majority of cases ranged between 102° and 103°, while one patient had a temperature of 105°.

4. After the so termed crisis had passed, the temperature was normal, and the patient felt stronger. The post infection weakness and prostration was less marked than was observed in previous attacks.

5. From the time the patient was up and around and until his return to his routine life, he neither appeared nor felt "all washed out" from his influenza attack. Meanwhile, he continued to remain physically in better condition than following any previous attacks.

One of the most striking facts in the influenza epidemic of 1918 was the extremely high death

rate of pregnant women. Invariably miscarriage and then death could be predicted to take place within 24 to 48 hours after the onset of the first symptoms of the disease. What caused this?

In my series of cases I had but one pregnant woman and that was during the last few days of December, 1928. She was a primipara and about three months pregnant. The fever was 102.5° and pulse rate 88 combined with the clinical symptoms of influenza, while the toxic and prostrate appearances of the patient was anything but encouraging. Under the treatment described, she was normal in three days. I had her under observation and prenatal care all through her pregnancy and delivered her a healthy baby girl the first week in July, 1929. After her influenza attack she experienced neither weakness, exhaustion nor prostration, while in the ensuing months before confinement she performed her own housework. Since that time she has been entirely well.

This single case of influenza during pregnancy, I admit, proves nothing. However, as previously stated, the epidemic of 1918 showed pregnant women to be indeed very poor risks when seized with this infection. An opportunity for much speculation and investigation!

The thyroid gland has been termed and correctly so, I believe, the governor of body metabolism. When pregnancy occurs, the thyroid gland is burdened. The same is true of the thyroid gland when a person is seized with disease or infection. The burden of the thyroid gland manifests itself microscopically and chemically by showing beginning hyperplasia, desquamation, loss of colloid substance and a diminished iodine content of the gland.

But here the question arises,—given a normal thyroid gland and an infection, pregnancy or other physical strain, will the use of compound solution of iodine prevent or diminish the foregoing microscopic changes as well as lessen the severity of the strain on the individual person? Moreover, will a person whose thyroid gland is burdened with pregnancy if seized with a severe infection such as compared with one like the influenza in 1918, be in greater danger of losing her life as compared with one who has a normal thyroid gland when seized with influenza?

One of the diagnostic findings in influenza is a leukopenia. Although I have not seen worked out the phagocytic per cent of leukocytes of a person ill with influenza, I most assuredly believe the phagocytic activity to be very low during this disease. As no leucocyte counts were

made in this series of cases there were naturally no observations of the effect of Lugol's solution on the leukopenia throughout the course of the influenza. However, leukocytosis is supposed to be stimulated by Lugol's solution. If the living unit, the leukocyte, has a low per cent capacity to attack infection, one would likewise conclude the constitutional state of individual parts of the body would likewise be in the same fagged condition.

Is it possible that constitutional diseases are diseases of the thyroid gland? Clinical observation of this series of cases leads me to believe this assumption. Clinical observation may lead one to various speculations and speculations

must have experimental proof. Had these patients been cared for in hospitals, daily accurate studies could have been carried out on them, but as all patients were seen at their respective homes these studies were not so readily performed. I confess that conclusions thus drawn without the aid of modern laboratory tests necessarily cannot rank as highly as conclusions supported by circumstantial laboratory data. Such proof eliminates enthusiasm, personal desires and a highly fallacious judgment and presents one with bare facts, and—bare facts count. There opens here, however, a field for a most comprehensive laboratory investigation.

FOURTEENTH ANNUAL CLINICAL SESSION OF THE AMERICAN COLLEGE OF PHYSICIANS

The American College of Physicians will hold its Fourteenth Annual Clinical Session in Minneapolis, February 10 to 14, 1930. The general headquarters will be at the Minneapolis Auditorium. THE JOURNAL-LANCET is pleased to present to its readers a few of the high lights of the Session.

WHO MAY REGISTER—

- (a) All members of the American College of Physicians in good standing for 1930. **Show your 1930 Membership Card.**
- (b) All newly-elected members.
- (c) Members of the Hennepin County and Ramsey County Medical Societies (Minneapolis and St. Paul) will be admitted without any registration fee, upon presentation of their 1930 membership cards in their respective societies. Furthermore, they will be given an opportunity to subscribe to the official journal of the College, *Annals of Internal Medicine*, at the courtesy rate of \$5 per annum for the first year (the period during which the proceedings of the Minneapolis Session will be published).
- (d) Medical students pursuing courses at the University of Minnesota Medical School, upon presentation of matriculation cards or other evidence of registration at that institution, will be admitted without fee.

REGISTRATION BLANKS FOR ALL SPECIAL CLINICS AND DEMONSTRATIONS will be sent to members later with the Final Program. Guests will secure registration blanks at the Registration Bureau during the Session.

REDUCED RAILROAD FARES—Transportation to and from the Minneapolis Clinical Session has been arranged on the Certificate Plan of fare and half fare. This applies to the railroads of the United States and Canada. Those who attend the Session will purchase going tickets at local railroad offices and at the same time request a "Certificate."

This certificate, when validated by the proper officers at the Registration Bureau at Minneapolis, will entitle members to purchase return tickets at half fare.

Reduced rates apply not only to members, but also to dependent members of their families.

SPECIAL FEATURES

CONVOCATION OF THE COLLEGE—8:00 o'clock, Wednesday evening, February 12, in the Auditorium.

All Fellows of the College and those to be received in Fellowship should be present. Newly elected Fellows who have not yet been received in Fellowship are requested to occupy the central section of seats especially reserved for them.

The Convocation is open to physicians generally and to such of the general public as may be interested. The front balconies of the Auditorium will be reserved for unregistered guests.

Following the Convocation Ceremony, the President, Dr. John H. Musser, of New Orleans, will deliver the annual address to the Masters, Fellows and Associates of the College.

THE ANNUAL BANQUET OF THE COLLEGE will be held at 7 o'clock, Thursday evening, February 13, at the Curtis Hotel. All physicians of the Twin Cities and vicinity and visitors attending the Session are invited, with their ladies, by the members of the College and its officers to attend this Banquet. Music will be furnished. R. B. von KleinSmid, President of the University of Southern California, will give the address. The committee hopes that no one will be prevented from attending and promises a rare treat in hearing this nationally known speaker and educator.

Following the Banquet the dance will occur and all are invited to remain.

Tickets for the Banquet, including the dance, are \$5 per person; and these must be purchased at the Registration or Information Bureaus before 10:00 o'clock, Thursday morning.

OUTLINE OF THE SESSION

MONDAY, FEBRUARY 10

Morning: Registration.

Afternoon: Opening session, which will include the addresses of Welcome and part of the Scientific Session.

Evening: Scientific Program.

TUESDAY, FEBRUARY 11

Morning: Clinics.

Afternoon: Scientific Session.

Evening: Scientific Session.

WEDNESDAY, FEBRUARY 12

Morning: Clinics.

Afternoon: Scientific Session.

Evening: Convocation, followed by Smoker.

THURSDAY, FEBRUARY 13

Morning: Clinics.

Afternoon: Scientific Session, short, followed by General Business Meeting at 4:00.

Evening: Banquet.

FRIDAY, FEBRUARY 14

Morning: Clinics.

Afternoon: Scientific Session.

PRELIMINARY PROGRAM

Monday, February 10, 1930

OPENING SESSION, 2:30 O'CLOCK

The Auditorium

- Addresses of Welcome.
 - Lotus Delta Coffman, President of University of Minnesota.
 - Elias P. Lyon, Dean of University of Minnesota Medical School.
 - Edward L. Tuohy, Duluth, President of the Minnesota Society of Internal Medicine.
 - S. H. Boyer, Duluth, President of the Minnesota Medical Association.
 - E. L. Gardner, Minneapolis, President of the Hennepin County Medical Society.
- Reply to Addresses of Welcome.
 - John H. Musser, New Orleans, President of The American College of Physicians.
- Colloids in Medicine.
 - Ross A. Gortner, University of Minnesota.
- Cerebral Localization.
 - Lewis J. Pollock, Chicago.
- The Psychological Panel in Diagnosis and Prognosis.
 - Walter Freeman, Washington, D. C.
- Gastro-Intestinal Troubles that Now Go Undiagnosed.
 - Walter C. Alvarez, Rochester, Minn.

EVENING SESSION, 8:00 O'CLOCK

The Auditorium

- Latent Hyperthyroidism Masked as Heart Disease.
 - Samuel A. Levine, Boston.
- Observations on the Etiology of Gall-Stones.
 - A. C. Ivy, Chicago.
- The Significance of Atelectasis in Bronchopulmonary Conditions.
 - Frederick T. Lord, Boston.

- Moving Pictures of the Results of Stramonium Treatment in Encephalitis.
 - Frederick Epplen and (by invitation) A. L. Jacobson, Seattle.

Tuesday, February 11, 1930

MORNING, 9:00 TO 12:00 O'CLOCK

Clinics and Demonstrations

AFTERNOON, 2:00 O'CLOCK

The Auditorium

VASCULAR DISEASE

- The Effect of Generalized Arteriosclerosis upon the Heart and the Systemic Circulation.
 - George E. Fahr, Minneapolis.
- Some Newer Aspects in the Problem of Essential Hypertension.
 - Norman M. Keith and James W. Kernohan, Rochester, Minn.
- The Retinal Vascular Changes in Hypertension.
 - Henry P. Wagner, Rochester, Minn.
- Arteriosclerosis in Diabetes.
 - Elliott P. Joslin, Boston.
- The Relations of Arterial Sclerosis and Renal Disease.
 - Alfred Stengel, Philadelphia.
- Causes of Arterial Hypertension.
 - E. T. Bell, Minneapolis.
- The Management of Hypertension.
 - James S. McLester, Birmingham.
- The New Possibilities in Classification and Treatment of Anemia.
 - Hilding Berglund, Minneapolis.
- Caring for the Ulcer Patient.
 - Seale Harris, Birmingham.
- Cinematographic Demonstration of Human Intestinal Protozoa. Pictures and Remarks on their Biology, Pathology and Treatment.
 - John V. Barrow, Los Angeles.

EVENING, 8:00 O'CLOCK

The Auditorium

- History of Syphilis.
 - Joseph L. Miller, Chicago.
- History of Certain Medical Instruments of Precision.
 - Logan Clendening, Kansas City.
- Spontaneous Pneumothorax, Non-tuberculous.
 - F. J. Hirschboeck, Duluth.
- The Healing of Tuberculosis, Illustrated by Films and Slides.
 - Francis M. Pottenger, Monrovia, Calif.

Wednesday, February 12, 1930

MORNING, 9:00 TO 12:00 O'CLOCK

Clinics and Demonstrations

AFTERNOON, 2:00 O'CLOCK

The Auditorium

- Splenic Puncture as a Diagnostic Procedure in Infancy and Childhood.
 - Julius H. Hess, Chicago.
- I. Diagnostic and Physiologic Studies in Certain Forms of Scleroderma.
 - George E. Brown and Paul A. O'Leary, Rochester, Minn.
- II. Surgical Indications and Operative Results in the Treatment of Vasospastic Types of

Scleroderma, with Sympathetic Ganglionectomy.

A. W. Adsom, Rochester, Minn.

3. Sympathectomy in Polyarthritis.
Leonard G. Rowntree, Rochester, Minn.
4. The Relation of Experimental Rheumatoid Inflammation to Allergy.
Benjamin J. Clawson, Minneapolis.
5. In Defense of the Stethoscope.
James B. Herrick, Chicago.
6. Rectal Temperature Curves; Normal and Abnormal.
William B. Breed, Boston.
7. The Limitations of Heliotherapy in Pulmonary Tuberculosis.
Bernard L. Wyatt, Tucson.
8. Resumé of Our Present Attitude Regarding Iodine in the Treatment of Toxic Goiter.
James H. Means, Boston.
9. Unusual Addison's Syndromes.
A. B. Brower, Dayton.
10. A New Method for the Treatment of Pellagra.
Clyde Brooks, University, Alabama.
11. Multiple Polyposis of the Colon.
J. A. Bergen, Rochester, Minn.

EVENING, 8:00 O'CLOCK

The Auditorium

CONVOCAATION OF THE COLLEGE

The General Profession is cordially invited. No special admission tickets are required.

1. Convocation Ceremony,
2. President's Address.
John H. Musser, New Orleans.

SMOKER

The Smoker will follow the Convocation Exercises, after a brief intermission. An attractive program has been arranged.

Thursday, February 13, 1930

MORNING, 9:00 TO 12:00 O'CLOCK

Clinics and Demonstrations

AFTERNOON, 2:00 O'CLOCK

The Auditorium

1. Symposium on The Biology of Cancer.
The Etiology and Biology of Cancer.
Leo Loeb, St. Louis.
The Nature of Heredity in Animals.
H. Gideon Wells, Chicago.
Heredity of Cancer in Man.
Aldred Scott Warthin, Ann Arbor.
The Principles of Radiation Treatment.
Francis Carter Wood, New York.
2. Undulant Fever in California.
J. Edward Harbinson, Woodland, Calif.
3. Undulant Fever; A Clinicopathological Study.
Walter M. Simpson, Dayton.
4. Tetany.
J. C. Meakins, Montreal.

The General Business Meeting of The College will be held at 4:00 o'clock in the Auditorium. All Masters and Fellows should attend.

EVENING, 7:00 O'CLOCK

The Curtis Hotel

THE ANNUAL BANQUET OF THE COLLEGE

(Procure tickets at the Registration Bureau.)

The address will be given by R. B. von KleinSmid, President of the University of Southern California, Los Angeles.

A Dance will follow the Banquet.

Friday, February 14, 1930

MORNING, 9:00 TO 12:00 O'CLOCK

Clinics and Demonstrations

AFTERNOON, 2:00 O'CLOCK

The Auditorium

1. Some Observations of Functional Diseases of the Alimentary Tract.
William Gerry Morgan, Washington, D. C.
2. Remarks on Chronic Infections.
Allen K. Krause, Tucson.
3. Symposium on The Rôle of Surgery in Pulmonary Tuberculosis.
Pneumothorax.
James Burns Amberson, Loomis, N. Y.
Pneumolysis.
Ralph C. Matson, Portland, Ore.
Multiple Intercostal Neurectomy and Phrenicectomy.
John Alexander, Ann Arbor.
Thoracoplasty.
Philip King Brown, San Francisco.
General Considerations of the Rôle of Surgery in Tuberculosis.
Gerald Webb, Colorado Springs.
4. The Diagnosis of Pre-Clinical or Latent Tubercle by Caulfield's Inhibitive and the T. C. F. (with Lantern Slides of Chests and Graphs).
W. E. Ogden, Toronto.
5. A Diagnostic Triad in Syphilitic Aortitis.
C. Saul Danzer, Brooklyn.

PROGRAM OF SPECIAL CLINICS AND DEMONSTRATIONS

Clinics and demonstrations will be held in the mornings from 9:00 to 12:00 daily, Tuesday to Friday, inclusive.

Tickets required. Registration blanks for all clinics and demonstrations are distributed with the Final Program to all members. Upon receipt, these clinic registration blanks should be filled out and returned at once to the Executive Secretary for the most satisfactory results. Indicate the clinic you wish to attend by giving large black-face letter preceding the place or name of hospital (do not use titles, places or names), giving first and second choice for each day. Upon receipt by the Executive Secretary of your application for clinic reservations, **proper tickets will be selected and held for you at the Registration Bureau at Minneapolis.** Reservations by mail cannot be made after February 1. Reservations may be made in person at the Registration Bureau on the evening preceding any clinic day.

Clinics and demonstrations will be given on the days indicated at the following places. The programs for these are extensive and attractive but for

lack of space are omitted here. They may be studied in the final program sent out by the College or seen on arrival here.

Tuesday, Wednesday, Thursday and Friday
UNIVERSITY HOSPITALS
UNIVERSITY OF MINNESOTA
(Union and Delaware Streets, S. E.)
Todd Amphitheater

Tuesday, Wednesday, Thursday and Friday
UNIVERSITY HOSPITALS
UNIVERSITY OF MINNESOTA
(Union and Delaware Streets, S. E.)
Eustis Amphitheater

Tuesday, Wednesday, Thursday and Friday
INSTITUTE OF ANATOMY
UNIVERSITY OF MINNESOTA
(Washington Avenue near Church Street, S. E.)
Room 102, First Floor

Tuesday, Wednesday, Thursday and Friday
HENNEPIN COUNTY MEDICAL SOCIETY
ROOMS
20th Floor, Medical Arts Building
(Ninth Street South between Nicollet and Marquette
Avenues)

Tuesday, Wednesday, Thursday and Friday
MINNEAPOLIS GENERAL HOSPITAL
(Fifth Street between Sixth and Seventh Avenues)
Sun Porch, First Floor

Tuesday, Wednesday, Thursday and Friday
MINNEAPOLIS GENERAL HOSPITAL
(Fifth Street between Sixth and Seventh Avenues)
Clinic Room, Basement Floor

Tuesday, Wednesday, Thursday and Friday
ST. MARY'S HOSPITAL
(2500 South Sixth Street)
Assembly Room

Tuesday and Friday only
SWEDISH HOSPITAL, NEW BUILDING
(Eighth Street at Ninth Avenue, South)
Clinical Laboratories, Third Floor

Tuesday, Wednesday and Friday only
NORTHWESTERN HOSPITAL
(Chicago Avenue and Twenty-seventh Street)
First Floor

Tuesday, Wednesday, Thursday and Friday
GLEN LAKE SANATORIUM
Assembly Room

Wednesday and Thursday only
VETERINARY BUILDING
UNIVERSITY FARM, ST. PAUL
Room 107, First Floor

Wednesday and Thursday only
ABBOTT HOSPITAL
(1717 First Avenue South)

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of December 11, 1929

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, December 11, 1929. Dinner was served at 7 p. m. and the meeting was called to order at 8 p. m. by the President, Dr. C. N. McCloud. There were 49 members present.

Minutes of the November meeting were read and approved.

The Secretary read the Annual Secretary's and Treasurer's reports. A motion was carried that they be accepted. Dr. Drake included in his Secretary's report his resignation as Secretary-Treasurer. A motion was carried that a rising vote of thanks be given to Dr. Drake for his faithful and efficient service to the Academy.

Dr. Geo. D. Head read, for Dr. J. W. Bell, the following report of the Committee appointed to draw up a memorial to Dr. Louis A. Nippert, and a motion was carried that this be spread upon the minutes of the Academy and a copy sent to Dr. Nippert's family.

LOUIS ALBERT NIPPERT, 1860-1929. The Minnesota Academy of Medicine is again called upon to mourn

the death of one of its oldest and most revered members, Louis Albert Nippert.

He was born in Basel, Switzerland, April 14, 1860. His father was a Methodist clergyman who at one time was President of the Methodist Theological Seminary at Frankfort-on-Main, Germany. His early education was carried on in the schools of Switzerland and preparatory to his college course he took work in the gymnasium and polytechnical high school at Karlsruhe, Germany. His parents later came to this country and located in Cincinnati, Ohio, where he completed his academic education.

Dr. Nippert began his professional studies in 1880 at Miami Medical College, Cincinnati, graduating in the class of 1883. After a year spent as an intern in the Cincinnati Hospital and a year as resident physician, he took post-graduate work in Paris and Vienna and then located in general practice in Minneapolis, in April, 1885.

He was married in June 1886 to Miss Mary Rauen. A daughter, Lillian, and a son, Rauen Louis, were born of this union, the son dying in 1909. Surviving him are his wife, his daughter, Mrs. E. F. Zelle, four brothers. Dr. Henry T. Nippert of St. Paul, Dr. Edgar Nippert of Los Angeles, Judge Alfred Nippert and Herman Nippert both of Cincinnati, and three sisters, two living in Cincinnati and one in Seattle.

Dr. Nippert died from a cranial fracture sustained while riding his horse, November 6, 1929.

Beginning his professional career as a general

practitioner, he developed those fine qualities of heart and mind born of the hard and trying experiences of a pioneer doctor. To a large clientele, many of his patients being poor or in moderate circumstances, he gave the best that was in him at all times without thought of his own comfort or health.

His later years were devoted to consultation practice in Internal Medicine. His large experience, analytical mind, splendid medical training, and cheering personality admirably fitted him for this specialty. The outstanding qualities of his character were his loyalty to the high ideals of his profession and his faithfulness to duty. A number of times the profession had honored him without self-seeking on his part. He was elected President of this Academy in October, 1912, and took office in November, 1912. His Presidential Address was entitled "The Etiology, Diagnosis and Treatment of Acute Infections of the Pleura and Lungs." He was also elected to the presidency of the Hennepin County Medical Society.

He was appointed Instructor in Clinical Medicine in the Medical School of the University of Minnesota in 1898, and was made Professor of Clinical Medicine in 1902. Many of his old students, some of them members of the Academy, will remember the practical character of his instruction well-grounded in a thorough knowledge of anatomy and pathology. He served the University and the State as a medical teacher until the reorganization of the faculty in 1913, at which time he resigned.

In 1907 Dr. Nippert again studied in Europe and spent much time in the hospitals and clinics.

He was a charter member of the Minnesota Society of Internal Medicine and in spite of the fact that a physical infirmity made it difficult for him to do so, he was always present at the all-day sessions of this Society.

The staffs of Abbott Hospital and Hillcrest Hospital were honored by his name upon the list of their active membership.

The following is a bibliographic list of his contributions to medical literature:

Septic Endocarditis. *Northwestern Lancet*, 1904, vol. 24, p. 39.

General Considerations in the Treatment of the Earlier Stages of Pulmonary Tuberculosis. *Northwestern Lancet*, 1905, vol. 25, p. 183.

Diagnosis and Therapeutics of Pneumonia. *Medical Brief*, St. Louis, 1907, vol. 35, p. 179.

Observations on the Methods of Diagnosis in some of the Clinics of Germany. *Jour. Minn. Med. Ass'n*, 1908, vol. 28, p. 197.

The Diagnosis and Treatment of Incipient Tuberculosis. *Jour. Minn. Med. Ass'n*, 1908, vol. 28, p. 508.

The Etiology, Diagnosis and Treatment of Acute Infections of the Pleura and Lungs. *Journal-Lancet*, 1913, vol. 33, p. 249.

Prognosis and General Management of Pneumonias. *Journal-Lancet*, 1921, vol. 41, p. 66.

The Committee:

J. W. BELL, M.D.

GEO. D. HEAD, M.D.

S. MARX WHITE, M.D.

The annual election was held at this meeting, and the counting of the ballots showed that the following members were unanimously elected as officers for the year 1930:

President, Dr. Gustav Schwyzer, Minneapolis

Vice-President, Dr. James S. Gilfillan, St. Paul

Secretary-Treasurer, Dr. R. T. LaVake, Mpls.

Dr. J. M. Armstrong (St. Paul) showed several original first volumes of medical magazines published in the United States:

1. In 1797 the first scientific periodical publication and the first medical journal was published in North America. This is a copy of Volume I of that journal "The Medical Repository" published in New York (1797-1824). Volume I contains nothing of particular value to us at the present time and much of the material in it is not strictly medical. You may look it over and judge for yourselves. However, it must have filled "a long-felt want" as Volumes I and II were reprinted in 1802 and again in 1804. This particular volume I hand you is the 1804 reprint. Many interesting things might be said about its editor but time does not permit.

2. This second volume is the first volume of "The Philadelphia Medical and Physical Journal" which was published from 1804-1809. There are one or two curious items in it. Whether it can be called the second medical journal published in the United States, I do not know, as the Philadelphia Medical Museum was published also in 1804 and ceased in 1811. I have no copy of this latter journal.

3. This third volume is the first volume of the "New England Journal of Medicine and Surgery" published in Boston in 1812. We are fortunate in having a full set of twenty-seven volumes in our Ramsey County Medical Library. If you will look over the table of contents you will find the names of many of the notable medical men of Boston among the contributors.

4. This fourth volume is Volume I of "The American Medical Recorder" published in Philadelphia in 1818. It continued publication until 1829. There are some quite interesting articles in this volume and also in the succeeding volumes but I cannot take the time to show the other volumes though we have a run of the first seven volumes.

5. This fifth volume is the first volume of "The Philadelphia Journal of the Medical and Physical Sciences" published in 1820, Nathaniel Chapman, editor. I call your attention to the title page where you will find printed the following quotation from the *Edinburgh Review*, No. LXX: "In the four quarters of the globe, who reads an American book or goes to an American Play? or looks at an American picture or statue? *What does the world yet owe to American Physicians or Surgeons?* (The

italics are Chapman's, not Sidney Smith's.) Chapman was an Edinburgh graduate himself but was a thorough Philadelphian also and this statement was galling. He would start a medical journal and show the world the injustice of this statement. The journal continued under this name until 1827 when Isaac Hays, who had been assistant editor for a year, became editor. Hays thought the Journal should be more national in character and changed its name to "The American Journal of the Medical Sciences" under which name it is now conducted and well known to all of you as one of the foremost medical periodicals of the world. There is no doubt Chapman made good when he challenged Sidney Smith.

I might say that Sidney Smith was hardly correct, as Dorsey's Surgery was in 1818 reprinted in Edinburgh for use as a textbook in that University. John Syng Dorsey wrote the first American treatise on Surgery, published in 1813. I will show it to you some other time. Isaac Hays edited this great journal from 1826 to 1869 and after his death his son, I. Mimis Hays, was editor until 1901. Thus, for 75 years it was "Hay's Journal" and so known to many of the past generation. With the exception of the Edinburgh Medical and Surgical Journal, the American Journal of the Medical Sciences is the oldest medical periodical in the world. The whole history of American Medicine and the progress of Medicine during its life may be found in its pages.

6. This collection of papers, while not strictly copies of a medical journal, are of intense interest and a literary curiosity as the "Rush-Light" was published weekly in New York for the sole purpose of heaping abuse and ridicule on Dr. Benjamin Rush of Philadelphia. It was published by Wm. Cobbett who wrote sharp articles under the name of Peter Porcupine. Cobbett was the proprietor of the "Porcupine Gazette" of Philadelphia published as a Democratic organ under the patronage of Thomas Jefferson to discountenance the Federalist party which was strong in Pennsylvania. Porcupine, in his abuse of Rush, went a step too far and, instead of confining his remarks to Rush's political activities, abused him as a physician. Rush sued Cobbett for libel. The suit being tried before a Court with Federalist leaning, a verdict of \$5,000 was obtained—an enormous sum in those days. Cobbett fled to New York and retaliated by publishing the "Rush-Light." Five weekly num-

bers were gotten out. Early in 1800, when the Federalist party made it too hot for him even there, he went to London and printed two more copies. I show you the copies printed in New York and hope at some time to secure the remaining numbers. Cobbett readily obtained employment as a political pamphleteer in England and was later elected to Parliament. (See McMaster's History of the People of the United States, and the Encyclopedia Britannica, under Cobbett.)

Last year the Academy decided to award a medal at its annual meeting to the member making the most noteworthy contribution to its program during the year. The special Awarding Committee, consisting of Drs. Colvin, Gilfillan and Bouman, this year decided to award the medal to Dr. Arnold Schwyzer of St. Paul.

Dr. A. R. Colvin (presenting the medal for the Committee): Perhaps it is quite unnecessary, in presenting this medal to one whom you all know so well, to say more than that it gives us all great pleasure to present it. It may, however, be well to say that the decision to award it to Dr. Arnold Schwyzer was enthusiastically unanimous as to the Committee and also as to the Academy.

In awarding this first medal for the most noteworthy and valuable contribution to the Academy for the past year, it is impressive that the recognition has been of the value of the presented experiences from the wide range of daily work of an earnest worker, combined with the interesting and constructive discussion of the work of others presented here. Experience looms large in medicine, and when experience comes from a broad, deep and original thoughtfulness and is presented with youthful enthusiasm, it is of utmost value to the Academy.

Allow me, sir, to present with great pleasure the medal awarded by the Academy for the most noteworthy contribution during the past year.

The Committee:

A. R. COLVIN, Chairman
JAS. S. GILFILLAN
H. A. H. BOUMAN

Dr. Arnold Schwyzer (accepting the Academy Medal): I surely feel that this is a very great honor, but I think the Committee might have chosen better when I look around and see the number of men who have made excellent contributions to this Academy. I assure you that I feel very, very deeply when I express my appreciation of this testimonial. When an appreciation comes from the men with whom one works

and meets all the time, I am sure it is worth more than when it comes from the outside. Though I can not quite see how I have earned it, I thank you heartily.

Dr. H. A. H. Bouman showed an enlarged drawing of the medal and gave the following interpretation:

White civilization while confined to Europe was in great danger a number of times of becoming overwhelmed by the Asiatics. The invasion of the Persians was one of the early historical occasions. The Greeks, under the leadership of Athens, defeated the enemy and dispelled all fear of future invasions. The will to live and to be free men had been hammered out during the years of bitter warfare and a national accomplishment of the first magnitude was theirs. Gratitude and exaltation forced expression; they built the Parthenon on the Acropolis in the sight of all to honor Minerva, their beloved Pallas Athene. The incomparable period of Pericles, which stocked the East and the West with pioneers and leaders, must honor Minerva. Menos, the indomitable mind, striving for the best things in man, his art; the deified personification of this mindedness can be seen in plastic form on the face of this medal. The bust of a marvelous woman; she was not born like others, but sprang from the lofty forehead of Zeus. The head of Gorgo indicates her father's Aegis—the wonderful shield. The visor is tilted back. In peace or war that wondrous human face radiates serene composure and patience, dignity and determination and persistent energy.

All those who brought forth their talents to be used and amplified looked upon her as their patroness; she was the illusiveness of their lives and their realizations. The spirit, that persists to do and accomplish, ruled them whom we call the Salt of the Earth in our day.

Dr. Harold Hullsiek (St. Paul) read his thesis, entitled "Adenomatous Polyps of the Sigmoid and Rectum"; this was illustrated with numerous lantern slides.

DISCUSSION

DR. DONALD BALFOUR (Rochester): I enjoyed very much hearing this thesis. Doctor Hullsiek has referred to one very important fact of which we should often be reminded; that is, the necessity for routine rectal examination in all patients. In spite of this being a platitude, one still finds many patients with a lesion of the rectum, sigmoid and colon, associated with bleeding, and who have had, in the immediate past, an operation for hemorrhoids to relieve them.

DR. THEODOR BRATRUD (Warren, Minn.): The subject of Dr. Hullsiek's interesting paper interests me

particularly with reference to the diagnosis of "intussusception."

I reported in 1914 the case of a 16-year old girl who came to us in 1913. She gave a history of several attacks of vomiting and was vomiting when brought in. We gave her an enema and she had a profuse foul stool. After this, a mass could be felt above the left Poupart's ligament. She started vomiting again and we found an intussusception. We could palpate two small tumors in the sigmoid. These were excised. The stump bled quite freely so it was whipped over with catgut. The tumors were a little larger in size than a walnut.

She did well until the fourteenth day postoperative, when she was going to go home, but started vomiting again. This time we found an intussusception on the right side. On opening the abdomen we found that she had an intussusception of the ileum, cecum and ascending colon. We could palpate several more masses in the lower ileum which, on opening the ileum, showed us a group of tumors similar to those in the sigmoid. At that time, we made a general exploration of the abdomen and found a mass higher up to the left of the midline about the size and consistency of a banana. On delivering this mass, we found an intussusception and in this area we found several more tumors similar to those in the sigmoid, which were excised.

After the second operation she was well for about five years when she was brought to the hospital in a moribund condition. The postmortem showed the lower ileum, cecum and colon intussuscepted almost down to the anus and the bowel was filled with numerous adenomatous polypoid masses.

A year later a 4-year old boy was brought in with a diagnosis of appendicitis. We found an intussusception of the lower ileum, cecum and ascending colon which we could not reduce. A resection with end-to-side anastomosis was done. In the resected piece of bowel we found multiple tumors which were more polypoid in structure than adenomatous. To date, this boy has been well.

We had a case this year of a 70-year old man, very anemic, who had been bleeding for about a year. We found seven polyps in the sigmoid, which were removed by high frequency current. The bleeding stopped and he improved for two or three months but now has masses in the liver, a great deal of pain in the spine and is going down hill very rapidly.

DR. L. C. BACON (St. Paul): It is sometimes interesting to know what nature does with these rectal growths. This excellent paper recalls to my mind a case I saw many years ago. A child 6 years of age had a rectal polypus within reach of the finger. The family refused operation though repeatedly urged to consent. I had an opportunity to follow that case to termination. The pedicle gradually elongated over a period of 6 or 8 months and eventually there was no polypus there. Nutrition must have been cut off through traction upon or twisting of the pedicle and separation occurred.

That case has made me feel that in children, especially in outlying districts, nature certainly does take care of some of them. I am not advocating leaving these cases—not by any means.

DR. H. T. NIPPETT (St. Paul): I attended a meeting of the Tri-State several years ago and some man

made the statement at one of the sessions "Don't be afraid to put your finger in the rectum, otherwise you might get your foot in it."

Dr. Hullsiek thanked the members of the Academy for their discussion of his paper.

Dr. F. E. B. Foley (St. Paul) gave a report of "An Unusual Case of Extra-Vesical Urinary Drainage" and showed several lantern slides. He also discussed the embryology and development of these anomalies of the urinary tract.

DISCUSSION

DR. ARNOLD SCHWYZER (St. Paul): We owe thanks to Dr. Foley for his splendid presentation of this subject. In listening to him, one cannot help but be impressed by the fact that the more we know the fine points in these anomalies, the more we can find conservative measures. I have heard tonight expressed the respect for the renal parenchyma, and I think that is a very important point. The saving of the parenchyma, if there is a possibility to readjust things, is very important, especially in women with possible pregnancies which may make great demands on the kidney substance.

The variety of anomalies shown here is very interesting and instructive. To emphasize the preservation of what can be saved, let me mention a case I saw yesterday. It is a woman on whom I had done a heminephrectomy, or rather a resection of one third of the kidney, seventeen and a half years ago. The young woman was brought into the hospital after four weeks' illness. During the last week she had severe chills every day and high temperatures, some pain in the right kidney region, with some albumin and cloudy urine. At operation we found the upper third of the kidney riddled with abscesses. We incised through that upper pole and a little beyond. These abscesses were spread all through the thickness of the parenchyma, but stopped abruptly in a straight line toward the remainder of the kidney. The removal of that upper third of the kidney, with the preservation of the other two-thirds, allowed this woman to face the future with two kidneys. She has since married and has gone through pregnancy without trouble. The result in that case was very gratifying. The patient has had no trouble from that kidney.

In a case of double renal pelvis with hydronephrosis in the upper one, we made an anastomosis between the upper hydronephrotic and the lower normal pelvis. This also gave quite a satisfactory result. The operation was over eight years ago, and the patient is in good shape. This was a pyelo-pyelostomy.

The meeting adjourned.

R. T. LAVAKE, M.D.

Secretary

BOOK NOTICES

CORONARY THROMBOSIS: ITS VARIOUS CLINICAL FEATURES. (Medicine Monographs, Vol. XVI). Samuel A. Levine, Peter Bent Brigham Hospital, Boston, Mass. 180 pages. Baltimore, The Williams & Williams Company, 1929. Price, Cloth, \$3.00.

This monograph is one of a series which appear originally in *Medicine*, a quarterly periodical, and later are published in monograph form. These monographs are intended as comprehensive reviews that adequately discuss a disease or certain aspects of a disease, and this purpose is well accomplished in Dr. Levine's book.

The data upon which this study is based includes 145 cases. After a brief historical review the author considers the etiological factors that may be concerned in this condition, emphasizing hypertension and long standing diabetes as frequent associations. He points out that lues plays no part, but that heredity may be of considerable importance. Apparently, the physical type and activity of the individual is a factor as coronary thrombosis was more frequent in the well-set, strong individual, somewhat overweight, who has been active physically. The average age was 57.8 years, the largest number occurred between 60 and 69. There was a preponderance of males, the ratio being about 3.5 to 1. The author then describes in detail the clinical features associated with closure of a coronary vessel, the pain usually severe and prolonged, the location varying from the upper abdomen to the chest. In a typical case, the patient is in shock, the heart sounds are distant, gallop rhythm and various irregularities may develop and râles appear in the lungs.

The most important indication in treatment is relief of the pain, and morphine usually in large doses is necessary. If there is shock with the pulse almost imperceptible, Dr. Levine advises large doses of caffeine. Digitalis is not indicated in the early stages but should be used if congestive heart failure follows. If there is edema of the lungs and cyanosis the oxygen tent may be helpful. Quinidine is useful if the attack is complicated by paroxysmal ventricular tachycardia. Dr. Levine does not mention the use of metaphyllin, an effective coronary dilator, which theoretically should be of value in promoting collateral circulation.

If there is any criticism of Dr. Levine's monograph it is only in his conception of coronary thrombosis as a distinct clinical entity. Chronic narrowing of the coronary vessels by sclerosis frequently presents a clinical picture similar to that of acute occlusion. Furthermore, since coronary thrombosis is constantly associated with sclerosis of the vessels it seems most reasonable to regard a thrombosis not as an entity but merely as one of the complications and frequent end-results of coronary sclerosis, which is the primary condition.

— M. H. NATHANSON, M.D.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana

The Official Journal of the
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The Hennepin County Medical Society
The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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ENDEMIC PSITTACOSIS

Evidently there is a good deal of discussion over the possible epidemic of parrot disease, so-called psittacosis, due to the fact that patients have been found who are suffering from this germicidal disease that resembles, in a way, undulant fever but is more like typhoid fever. People, as well as parrots, who are affected by the disease die. In Mexico all parrots affected have been ordered exterminated in order to prevent a spread of a real epidemic. The parrots that come to this country have evidently contracted or acquired the disease by contact with other parrots as they are imported from the tropics.

This is not the first time psittacosis has been known in this country, it has long been endemic here. Comments in the daily press have intimated that it finds its victim among the large element of the population that exhibit parrot-like traits, whatever that may be. The editor knows a lot of people that are no better than parrots but we call them morons; they do not know enough to keep their mouths or beaks shut, and they are the very ones who expose themselves to the danger of the disease.

The possibility of an epidemic of this sort is real, however, and the disease itself cannot be dismissed without consideration. During the Paris epidemic Nocard isolated from the wings

and bone marrow of the parrots affected a bacillus which he regarded as the cause of the disease, so we may safely leave it as a bacillary product. Gilbert and Fournier reported the isolation of a bacillus similar to Nocard's bacillus from the heart's blood of a woman dying of the disease. This is the only record of the finding of Nocard's bacillus in human beings. Psittacosis bacillus is very readily isolated from the blood and organs of the parrots affected with the disease, but in literature on the subject one finds but a single recorded instance of its isolation in man, as reported above. Despite the constant association of parrots with the disease in man, a causal relationship has not been absolutely established. An organism growing so readily on ordinary culture media should have been isolated more frequently. Leichtenstern (1898) believes that the so-called psittacosis epidemics were nothing more than cases of atypical pneumonia in which the parrot played no etiological rôle. This view is apparently contradicted by the Paris epidemic and the occasional case reports of a similarity to typhoid and undulant fever; but, as we know so little of undulant fever and the diagnosis of typhoid fever would depend on the condition of the case, whether individual or parrot. The history of association with sick parrots or their presence should be noted. But it has been found that all organs are acutely congested. Spleen and liver are enlarged, and the lymph glands moderately so. Peyer's patches and the solitary follicles in the intestine may be moderately enlarged, but no ulceration is present. The lung usually shows the usual changes due to a bronchopneumonia or a lobar pneumonia, but necropsy reports are few and very indefinite.

The symptoms found in parrots suffering from the disease are characterized by loss of appetite, drowsiness and diarrhea. The birds refuse food, and remain in dark corners of the cages with drooping wings and ruffled feathers.

In man the period of incubation is about nine days. Both sexes are apparently equally susceptible. The onset begins with malaise, pains in the back and limbs, chills and headache, and occasional nausea and vomiting. These are common characteristics of many diseases in early stages so that early diagnosis would be difficult to make unless there has been association with parrots and the suspected bird or birds are carefully examined in the deep feathers. Bleeding from the nose has been described in connection with Psittacosis in humans. The symptoms increase in severity and remain at their height for about five days. Then come the usual symp-

toms of an acute infection, bronchitis, lobar pneumonia, often with a temperature of 106° and a period of coma which may ensue followed by death. This may be said of other acute diseases, but in this instance if there is a parrot in the vicinity the bird can be examined for the bacillus while in the human being very little opportunity is offered for bacterial examination. The disease is milder in children than in adults. The mortality is high, varying from 30 to 40 per cent in different epidemics. Elderly patients succumb more rapidly and particularly those with pre-existing organic lesions of the heart or lungs.

The diagnosis will most often be confused with typhoid complicated by pneumonia. The onset may suggest influenza but coryza and conjunctival congestion are absent. A distinct leucopenia will point to typhoid fever, and repeated blood cultures in the first ten days should result in the finding of typhoid bacillus or possibly the *B. Psittacosis*.

Assuming that it is true that the disease in man is derived from infected parrots, then the immediate isolation of such birds and thorough sterilization of their cages is called for. Newly imported parrots and closely allied species such as the parrakeet should be kept in quarantine until their physical condition is ascertained. In the presence of an epidemic, immunization may be attempted by means of *B. Psittacosis* vaccines used like typhoid vaccines. Otherwise the treatment of the disease is essentially symptomatic. The diet should be restricted and consist chiefly of milk, broths, cereals, etc. In general the treatment would be that of typhoid fever.

The above résumé of literature on the subject of *Psittacosis* has been derived from Nelson's Loose-leaf Medicine, which contains essentially what is known on the subject at the present time. The number of deaths so far reported in this country have been about seven. But we will be looking for a marked increase in the number of cases in the spring or early summer.

THE HENNEPIN COUNTY TUBERCULOSIS ASSOCIATION

Abstracts on tuberculosis have been issued monthly by the Hennepin County Tuberculosis Association, and the last meeting was held on January 30, at the Citizen's Aid Building, a very proper place for such a meeting as they are there associated with the Visiting Nurses organization. A large attendance is merited by such

a meeting because the various officers of the Association, here and in St. Paul, in attendance are representative men in the medical work. Dr. E. A. Meyerding took part in the proceedings.

It seems to the average practitioner that tuberculosis is better advertised than almost anything else, in one way or another, but that is no adverse criticism of the Association. It is a good thing to have the doctors notified as to what is going on or what has been going on in this particular field of medical practice, as tuberculosis is one of the most important diseases with which we have to contend and it seems to the editor that in spite of advertising and lecturing and notices pertaining to such clinics the attendance is generally too small for such an association as this, and particularly when one considers the membership of two such large societies as the Hennepin County Medical Society and the Ramsey County Medical Society. As we expect the proceedings of these meetings to be of noteworthy benefit we hope they will be widely circulated and in readable form.

THE BULLETIN OF THE HENNEPIN COUNTY MEDICAL SOCIETY

The Bulletin of the Hennepin County Medical Society, Volume I, No. 1, issued January 10, 1930, has just reached the editor.

The Bulletin contains, beside the remarks of the president at the annual meeting of the Hennepin County Society, a list of the committees, and, next, a report of the scientific meetings with suggestions as to what should be done. We learn that the budget of the Association will be at least five thousand dollars a year. Then they present an editorial body composed of Dr. Lewis M. Daniel, as editor, with Dr. Olga S. Hansen and Dr. Theodore H. Sweetser as associate editors.

In the issue referred to above, the Bulletin contains a full list of the committees and delegates to the state convention. The notice of the meeting of the American College of Physicians, of which Dr. S. Marx White is chief director, is also printed therein.

DR. ROBERT DOUGLAS ALWAY

Robert Douglas Alway, M.D., died December 21, 1929, at his residence in Aberdeen, S. D. He was the son of William James Alway, M.D., and was born September 9, 1868, in Smithville, Ontario, Canada.

Dr. Alway's health had been failing during

the past year and it is recorded that cerebral hemorrhage was the cause of his death.

Dr. Alway was graduated from the Hamilton Collegiate Institute, and in 1893 received his degree of Doctor of Medicine in the University of Toronto.

He was married to Kate Prunty in October, 1894, and had two children, James Douglas and Martha Marie.

Dr. Alway located in Graceville, Minnesota, in 1894 and practiced until 1899, when he decided to prepare himself for special work in Eye, Ear, Nose and Throat. He studied this work in Chicago and New York and in the clinic of Vienna, Austria.

He located in Aberdeen, S. D., in 1901, and his son became associated with him there in 1925.

Dr. Alway was very active in community and state affairs, was a member of the staff of St. Luke's Hospital, and one of the founders of the Lincoln Hospital. He was president of the State Board of Health and Medical Examiners, and served as a member of the Council of Defense during the World War.

Dr. Alway was a very active Mason, and a member of the Chapter, Knight Templars, Shrine and Eastern Star. He was a Past High Priest of the Chapter, Past Commander of the Knight Templars, Past Potentate of Yeldux Temple of the Shrine and Past Patron of the Eastern Star.

Dr. Alway was also very active in all of his professional societies, and a number of the local, state and national organizations. He was a fellow of his local District Medical Society, State Medical Association, American Medical Association and American College of Surgeons, and a member of the American Academy of Ophthalmology and Oto-Laryngology.

Dr. Alway was the past president of the State Medical Association, and also served several years as secretary and treasurer, and at the time of his death was the Councilor for the Aberdeen District.

Dr. Alway was ever alert and active as to the needs of the profession, giving freely of his time and counsel in the preparation and consummation of the scientific and economic programs of the Association.

He is survived by a son, James Douglas Alway, M.D., who was associated with his father, and who will continue in their well appointed and designed offices; a daughter, Miss Martha Marie, of Toronto, Canada; Mrs. Eleanor Alway, his wife; a brother, John Alway,

of Cleveland, Ohio, and a sister, Miss Agnes Alway, of Buffalo, N. Y.

J. F. D. Cook, M.D.,
Secretary of the South Dakota
State Medical Association.

NEWS ITEMS

Dr. Bernt Odegard, of Northwood, N. D., has opened offices in Mayville, N. D.

Dr. J. R. Nagle, who has been located at Watertown, S. D., has recently moved to Worland, Wyo.

Dr. L. S. Fuller, of Chicago, Ill., is now associated with the Cook County Hospital at Hibbing, Minn.

Dr. A. M. Limburg, Fargo, N. D., has just been re-appointed as County Superintendent of Health for Cass County.

Dr. A. G. Moffatt, of Howard Lake, Minn., died at his home on December 18, 1929. Dr. Moffatt was born in 1865.

The appointment of Dr. W. S. Howard, of St. Paul, to the head of the medical unit at the St. Paul postoffice was announced.

Dr. J. R. Ostfield, formerly located at Rockham, S. D., has moved to Jamestown, N. D., where he has opened offices for general practice.

The twenty-seventh annual meeting of the Hennepin County Tuberculosis Association was held January 30, at the Citizens' Aid Building, Minneapolis.

Dr. Daniel C. Darrow, founder of Clay County's first hospital, at Moorhead, Minn., died January 10, in Crookston. Dr. Darrow was 80 years of age.

Dr. W. L. Forster who, for the past few years, has been associated with the Hibbing Rood Hospital, has accepted a position with the Chisholm Rood Hospital.

Dr. Mattice, of Bellingham, Wash., died on Christmas day. Dr. Mattice was one of the pioneer physicians in Elkton, S. D., and is well remembered by pioneers there.

The recent completion of the Nurses Home at San Haven, N. D., has enabled the management to admit twenty-two patients from a long waiting list. This institution now cares for over two hundred cases of tuberculosis.

About 50 eye, ear, nose and throat specialists from the middlewest section of the United States

met January 21, in Rochester, for a meeting of the Laryngological, Rhinological and Otological Society. The meeting was presided over by Dr. H. I. Lille, a vice-president of the national group.

The Huron Medical Society, of South Dakota, at their last meeting, January 9, elected Dr. W. H. Saxton, of Huron, president of the Society. Dr. Saxton succeeds Dr. J. C. Hagin, of Miller. Dr. M. E. Cogswell, Wolsey, was named vice-president, and Dr. W. H. Griffith, of Huron, was re-elected secretary-treasurer.

At the December meeting of the Cass County, N. D., Medical Society the following officers were elected: Dr. Axel Oftedal, president; Dr. R. B. Bray, vice-president; Dr. B. K. Kilbourne, secretary-treasurer; Dr. M. McGregor, Dr. R. E. Weible and J. F. Hanna, board of censors; Dr. B. K. Kilbourne, delegate to state meeting.

Officers for the ensuing year were elected at the annual meeting of the Union Hospital Staff of New Ulm, Minn., which was held on January 7. The following were elected: Dr. W. A. Meierding, president; Dr. F. H. Dubbe, vice-president; Dr. C. A. Saffert, secretary-treasurer; Drs. L. A. Fritsche, O. J. Seifert, and G. F. Reineke, executive committee.

At the annual meeting of the Tri-County Society held at Fessenden, N. D., recently, the officers for 1930 were unanimously elected as follows: President, Dr. H. Van de Erve, Carrington; vice-president, Dr. P. A. Boyum, Harvey; secretary-treasurer, Dr. A. F. Hammargren, Harvey; delegate, Dr. J. J. Seibel, Harvey; alternate, Dr. D. W. Matthei, Fessenden.

Dr. H. B. Aitkens, of LeSueur Center, Minn., was made president of the Nicollet-LeSueur Medical Association at their annual meeting. Dr. J. O. McKeon, of Montgomery, was elected vice-president; Dr. J. W. Daniels, of St. Peter, secretary; Dr. F. P. Strathern, of St. Peter, treasurer; and Dr. Swan Erickson, of LeSueur, was named delegate to the state medical meeting.

Dr. M. C. Bergheim, of Hawley, Minn., was elected president of the Clay-Becker Medical Association, of Minnesota, at its annual meeting in Mora, Minnesota, to succeed Dr. R. A. Scott of Detroit Lakes. Other officers elected were: Dr. O. C. Larsen, Detroit Lakes, vice-president; Dr. J. H. Heimark, Moorhead, secretary-treasurer, and Dr. E. W. Humphrey, Moorhead, and Dr. L. H. Rutledge, Detroit, censors.

The Stutsman County Medical Society of North Dakota held its annual meeting in De-

cember and elected the following officers for 1930: President, Dr. Joseph Sorkness; vice-president, Dr. S. W. Melzer, Woodworth; secretary-treasurer, Dr. T. L. DePuy, Fargo; delegate to state meeting, Dr. F. O. Woodward; censor, Dr. Geo. H. Holt, Jamestown. Dr. A. A. Whittemore appeared before the Society and urged the Society to get behind a full-time health unit for Stutsman. The Society went on record favoring a health unit for this County.

The Devils Lake District Medical Society held its Annual Meeting, January 16. Dr. J. F. Hanna, of Fargo, gave us a very interesting talk, with moving picture, on the subject of Face Presentation and Treatment. The election of officers for the following year resulted as follows: President, Dr. J. D. Graham, Devils Lake; vice-president, Dr. C. Smith, Devils Lake; censor, Dr. C. J. McGurran, Devils Lake; delegate, Dr. N. McLean, Devils Lake; alternate, Dr. G. J. McIntosh, Devils Lake; and secretary-treasurer, Dr. G. F. Drew, Devils Lake.

At the annual meeting of the Grand Forks District Medical Society held at the Ryan Hotel, January 15, 1930, the following were elected to office: Dr. H. D. Benwell, president; Dr. C. R. Tompkins, vice-president; Dr. M. B. Ruud, Treasurer; Dr. W. A. Liebeler, secretary; Dr. J. H. Moore and Dr. C. J. Glaspel, delegates; Dr. W. H. Witherstine, Dr. Thomas Mulligan, and Dr. H. G. Woutat, censors; Dr. James Grassick and Dr. G. J. Gislason, auditing committee. New members: Dr. A. N. Flaten, Edinburg, N. D., and Dr. H. O. Ruud, Grand Forks.

Eleven men and one woman were granted licenses to practice medicine and surgery in North Dakota as a result of examinations held in Grand Forks, according to a report of Dr. G. M. Williamson, secretary of the examining board. The woman is Pearl V. Matthael, of Fessenden. Others licensed are Clarence B. Larson, Wolfpoint; Bernard E. O'Reilly, Minot; Ruben H. Brehlin, Williston; Arnold E. Hetzler, Minneapolis; Samuel Miller, Medina; John M. Nelson, Glen Ullin; Herbert K. Kent, Powers Lake; Joseph J. Lapointe, Munich; Herbert M. Knudtson, Fargo; Allen L. Klein, St. Thomas, and Norman J. Barnes, Aneta.

At the last meeting of the Stark County Medical Society, held January 14, 1930, at Dickinson, N. D., the following officers were elected for the ensuing year: President, I. M. Law, Halliday; vice-president, Vern Neville, Dickinson; secretary-treasurer, A. E. Spear, Dickinson; delegate,

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DISEASES OF THE LARGE INTESTINE*

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Diseases of the large intestine readily divide themselves into inflammatory lesions, benign and malignant tumors, and metabolic, congenital and functional disorders.

In the first group, in the order of the frequency of their occurrence at The Mayo Clinic, are bacterial chronic ulcerative colitis, infection with *Endameba histolytica* (amebic colitis, tuberculous colitis, and diverticulitis). Other, rarer infections, such as those by *Balantidium coli*, occur infrequently. Bacillary infections are rare.

The malignant tumors of the second group include carcinoma and sarcoma; the former are by far the most common.

The benign lesions include polyposis, either single or multiple, lipomas, cholesteatomas, volvulus, infarction, pericecal inflammatory lesions, and complications of other conditions, such as stricture.

Under the term metabolic disturbances, it seems fair to group sprue and pellagra, and possibly the ulcerative lesions which follow the ingestion of some of the heavy metals. Disorders like the ulceration of the colon in fatal uremic poisoning and the so-called pancreatic diarrhea also may be listed here.

The functional group presents a series of conditions, of which names are more illustrative of general bodily states than actual disease. Such conditions as "mucous colitis," irritable colon, spastic constipation, nervous diarrhea, and other

similar designations are best grouped together and considered from the standpoint of the patient as a whole; the condition of the bowel can be considered as only part of a systemic disability.

SYMPTOMS

Bleeding.—Rectal bleeding is the outstanding and most significant single symptom of organic disease of the large intestine. It occurs with hemorrhoids, but hemorrhoids should never be blamed for its occurrence until other causes have been ruled out. Its presence in chronic ulcerative colitis, amebic colitis, tuberculous colitis, malignant lesions, and polyps, is significant. By the type and time of its occurrence, valuable information as to probable diagnosis can often be obtained. It may occur with diverticulitis, benign stricture of the colon and some of the metabolic disturbances.

Change in the character of the stool is probably the next most common symptom. Often it will be of greater significance than bleeding. The sudden or insidious onset of diarrhea or an increase in the quantity of rectal discharge is nearly always suggestive of serious trouble.

In chronic ulcerative colitis, the progressive increase in frequency of mucoid rectal discharges, containing blood and pus, is pathognomonic. Discharges occur day and night, often without periods of remission. In parasitic infection, there is more likely to be relief or improvement at night. Alternation of failure to

*Read before the Aberdeen, South Dakota, District Medical Society, November 19, 1929.

have bowel movements and of loose, watery motions, with little if any visible blood, may occur in tuberculosis. Bacillary infections are more likely to occur in epidemic form, and watery stools, heavily laden with mucus, predominate.

Primary difficulty in bowel movement, followed weeks or months later by urgency and frequency of rectal discharge and in which the stool is streaked or mixed with blood, should always suggest a malignant lesion. The shape and size of the stool occasionally add valuable information, but compared with frequency, urgency and admixtures with blood, mucus, and pus, it fades into insignificance.



Fig. 1. The large intestine after a barium enema, showing the deformity of chronic ulcerative colitis.

Distress.—Gruelling cramps of any part, or along the line of the colon, straining, and urgency indicate inflammatory ulcerative disease. Localized obstructive cramps and pain often are associated with malignant disease. Distress referred to the epigastrium is common but is associated with peristaltic movement rather than directly with taking of food, and this is a valuable differential point between lesions of the colon and of the stomach.

The distress of diverticulosis occurs along the line of the colon more as twinges of pain, transient and not severe. It simulates that of "irritable colon" due to other causes.

Loss of weight.—Loss of weight may occur with all afflictions of the large intestine, but with malignant disease it is usually progressive. With chronic ulcerative colitis it may be very rapid, with much wasting, and then a stationary condition, or a remission in which lost weight is rapidly regained, may supervene. In ulcerative tuberculous lesions loss of weight may resemble that of malignancy but in the hyperplastic type of tuberculosis it will rarely be great. In the other conditions, loss of weight is less marked.

Duration.—The length of time a given patient has had trouble often suggests the nature of the condition. A relatively short history, with progressive failure, is more likely a history of malignant disease than of an inflammatory condition.



Fig. 2. The colon after a barium enema, showing the defect produced by ulcerative tuberculosis of the right half of the colon.

Moreover, a history of years of severe trouble, with relative or complete remissions, at times with seasonal variations, is probably a history of chronic ulcerative colitis. Furthermore, an insidious onset of intestinal dysfunction, after a known pulmonary infection, would more likely be due to tuberculosis. Sudden, acute, watery dysentery, after a visit to the tropics, association with other patients having similar trouble, liberal consumption of leafy vegetables, but at times without demonstrable contact with a source of organisms is most likely to be due to parasitic infestation. A short, acute attack of pain simulating appendicitis, except for its situation on the left side, is likely to be due to diverticulitis.

GENERAL EXAMINATION

Assuming, of course, that a thorough general examination is always undertaken, the most valuable information comes from two procedures: palpation of the abdomen, and digital examination of the rectum. Careful palpation, from cecum to rectum, may reveal a large, distended, boggy or prolapsed cecum or a mobile tumor anywhere along the line of the large intestine. In case of inflammatory disease, fixation is the rule rather than the exception. In case of chronic ulcerative colitis, the colon may frequently be mapped out as a stiff, rope-like tube. Digital examination should never be

gives the most information, the proctoscope or roentgen rays, is debatable. With the proctoscope, one views the lower 24 to 30 cm. of the tract above the anus. Here one obtains a direct view of the anal region, and of any condition of disease, ulcers or defects, or new growths in that region. Such examination also affords the best possible opportunity for obtaining material for culture directly from a lesion, relatively uncontaminated by the host of organisms usually present in the stool.

The fluoroscope, and the roentgenogram obtained after barium enema, give the most valuable information that is to be obtained of the

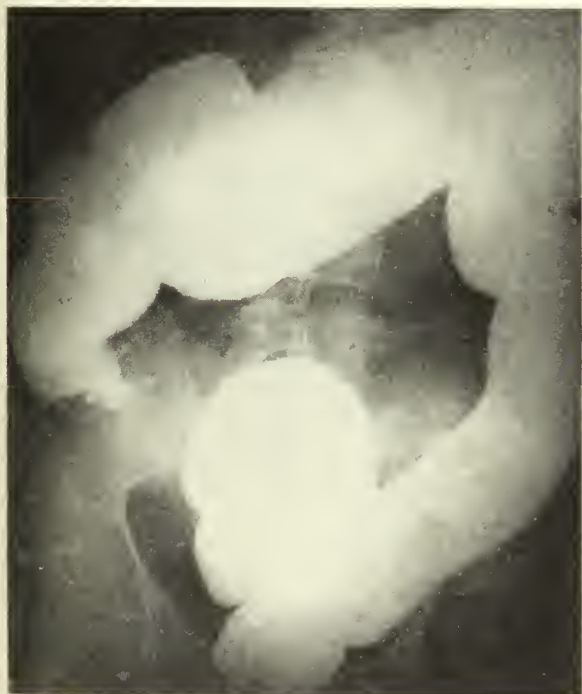


Fig. 3. The colon after barium enema, showing the effect of hyperplastic tuberculous of the cecum.



Fig. 4. The colon after barium enema, showing a filling defect in the ascending colon caused by carcinoma.

omitted. It will often elicit the source of the bleeding. Fever is only valuable in a differentiation of the inflammatory diseases.

The three most valuable aids to the anamnesis of intestinal diseases are: examinations of stool, proctoscopic examination, and the roentgenographic appearance after barium enema. The stool is preferably examined in the morning, after the administration of small quantities of magnesium sulphate. Significant observations concern its gross character and size, the amount of blood, mucus and pus, and microscopic evidence of parasites or ova, or of acid-fast bacilli.

The question of which device of precision

colon above the brim of the pelvis.

In preparing a patient for a proctoscopic examination, abstinence from food the night before examination, and rectal irrigation until the return of clear fluid is obtained, has proved satisfactory. For the roentgenologic examination, abstinence from food for about twelve hours before examination, and administration of a laxative at the time the fast begins, followed by cleansing enemas just before the injection of the barium, has given the best results.

Information obtained by ingestion of barium by mouth is so scant as to rarely make it a worth while procedure in cases of organic disease.

Typical roentgenograms in cases of chronic ulcerative colitis (Fig. 1), ulcerative tuberculosis (Fig. 2), hyperplastic tuberculosis (Fig. 3), carcinoma (Fig. 4), polyposis (Fig. 5), diverticulosis without diverticulitis (Fig. 6), and Hirschsprung's disease (Fig. 7) are presented. The roentgenograms were obtained after barium enema.

The laboratory examinations that are so frequently carried out, often in a routine way, may give valuable information. Leukocyte counts add information in infectious diseases; urinalysis serves to distinguish palpable tumors from lesions of the kidney, Wassermann reactions of

lesions has been observed repeatedly¹.

Diverticulosis occurs in a type of colon which is more or less flabby, easily distended, and may result from the shoving of the inner layers through weaker outer layers. The resultant processes may be likened to the fingers of a glove. When diverticulosis is once established, diverticulitis is likely to occur.

Primary infection of the large intestine with acid-fast bacilli is uncommon. Tuberculosis here is usually secondary to that of the lungs.

Pellagra is thought to be due to vitamin deficiency. The cause of sprue is still being debated. The *Monilio psilosis* of Ashford may



Fig. 5. The colon after barium enema, showing multiple small defects of the colon due to polyposis.



Fig. 6. The colon after barium enema, showing multiple diverticulosis.

the blood rule out or disclose syphilitic infection, and roentgenograms of the thorax give evidence of tuberculous and metastatic lesions.

ETIOLOGY

Little advance has been made in recent years in knowledge of the cause of carcinoma. Carcinomas of the colon are frequently found where years before polyps were seen. Various stages of such polypoid change have been observed. Polyps discovered accidentally at necropsy have the characteristics of early, low grade malignant lesions. The series of events of chronic ulcerative colitis, polyposis, and multiple malignant

be a factor in its inception but does not seem to be alone responsible. Certain dietary deficiencies have been found to have a bearing.

Finally, the disease, concerning the cause of which a chapter has been added in the last five years, is chronic ulcerative colitis. That a diplostreptococcus² has causal relationship cannot be gainsaid. Whether or not it is the sole instigator of trouble, future work should settle. The organism has been isolated from the lesions of patients with the disease, and it has been injected intravenously into rabbits and dogs with the subsequent development of ulcerative lesions of the large intestine in these animals. It has again been isolated from the blood and lymph nodes

of these animals, has been reinoculated into other animals and again similar lesions have developed.

TREATMENT

The essentials of the present treatment of bacterial chronic ulcerative colitis include three factors: immunization against the causative organism, removal of distant foci of infection and a liberal generous diet. The attempt is made to accomplish the first with specific immune serum in the severe cases, and with autogenous vaccine in the more chronic cases with less depletion. If the disease is allowed to progress, depleting, chronic invalidism is the rule.

The treatment of infestation with *Endameba*



Fig. 7. The colon after barium enema, in a case of Hirschsprung's disease.

histolytica has been satisfactory. One of the arsenicals, that is, treparsol or stovarsol, in conjunction with emetin hydrochloride, has usually controlled the condition in cases observed at The Mayo Clinic. This is best given in courses and usually several of them are required. Occasionally, in hypersensitive persons, poisoning results; hence, administration of the arsenical should always be accompanied with caution. Yatren (anayodin) may be employed as an addition to the therapeutic armamentarium in those cases in which the patients do not do well. Bismuth emetin iodide occasionally has yielded results when the other drugs have failed. It may be employed in hypersensitive patients. Large doses

of bismuth often have proved helpful.

Control of the ulcerative form of tuberculosis has been discouraging. It is usually a part of extensive intestinal tuberculosis. The usual treatment of any open tuberculous lesion has found favor. A different state of affairs exists when the lesion is local and hyperplastic. Sur-

Diverticulosis gives little trouble. Patients with this disease should be warned to keep the stools soft, and to avoid seedy fruits and the rougher vegetables. The addition of mineral oil, and occasionally of belladonna, has been satisfactory for most patients who have had diverticula. When diverticulitis becomes superimposed on the diverticulosis, a serious condition may ensue. Perforation and formation of abscesses may result. Rarely does generalized peritonitis follow, but perforation into neighboring viscera, such as the bladder, is not uncommon. Conservative surgical procedures have been advocated in the majority of cases of diverticulitis in cases in which surgical treatment has become necessary. Temporary colostomy, subsequent careful observation, and perhaps further exploration, has controlled most of the cases.

Benign lesions, other than those that are inflammatory, usually are handled as the various symptoms dictate. Adenomatous polyps, when possible, are fulgurated with electric cautery. Recent advances in the treatment of megacolon have been made.

In the treatment of the functional intestinal disorders, great care must be employed, as in the handling of all types of neurosis, that no single organ or system receives too much of the blame for the patient's complaints. Those of us who stress disorders of the colon in the case of an "irritable colon" often aid in the development of profound neurosis. Mental hygiene, aiding general nutrition, encouragement, and physical recreation, have done most for these patients.

COMMENT

The study of diseases of the large intestine in recent years has become a fascinating chapter in medicine. Only a few years ago little, if anything, was taught students of medicine about this large organ.

A step forward in the treatment of chronic ulcerative colitis has been made with the isolation of the diplostreptococcus and the establishment of the treatment on a specific basis.

Conservatism in the care of patients with di-

verticulitis is an advance in treatment.

The treatment of infestation with *Endameba histolytica* probably is the most satisfactory of that employed for any of these afflictions. The action of the drugs used is not known.

Recent studies by Learmonth and Rankin offer some hope for the hitherto rather hopeless condition of Hirschsprung's disease. Their work thus far remains unpublished.

Coöperation between surgeon and internist in treatment of surgical diseases of the large intestine, with careful preoperative preparation and prolonged postoperative observation, has markedly reduced the mortality in these cases.

Goldberger's study has added a notable contribution to the cause and treatment of pellagra. Ashford's work has greatly furthered knowledge of sprue.

There still remains the vast army of sufferers from the so-called functional conditions which affect the intestine, about which little is known, as well as numerous serious disorders of the colon concerning which knowledge is far from complete.

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MIGRAINE

BY RICHARD STANLEY AHRENS,

MINNEAPOLIS, MINNESOTA

It is not quite clear why your President refers to me as a human psychiatrist; perhaps it is because I have the temerity to speak to you on the subject of migraine, a subject of which none of us know very much. As a matter of fact, I am here chiefly because I made the remark to one of your members last winter that I could pick a migrainous individual out of a group. He called my bluff, and as a result, I am here today to demonstrate what I meant when I said that migraine was a type reaction. I shall, therefore, not deal much with the headaches as you know them, but I shall spend my time trying to point out to you that migraine is essentially a type reaction.

Undoubtedly, you are all familiar with the efforts to divide the human race into groups and have perhaps grown weary of it. Since the beginning of time, efforts have been made to subdivide the human race into types, anatomically, physiologically, psychologically and psychopathologically. Draper with his three panels, the anatomical, the physiological, and the physiological is perhaps the most recent and best known to you. A survey of this interest in types shows that:

Hippocrates attempted to divide the human race into the phthisicus and the appolepticus types.

Rostan in 1828 described the muscular, digestive, respiratory and cerebral types.

Walker in 1852 chose Diana, Venus and Minerva as representing the locomotive, nutritive, and mental types of beauty, respectively.

Viola chose the terms megalosplanchnic, microsplanchnic, and normosplanchnic to describe the three types. Perhaps Jack London had something of this sort in mind when he described the calm, steady, unruffled individual as having guts.

Mills, Brych, Kretchmer, Davenport, Stockard, Ashner and many others have seen fit to classify the body into types, all of their divisions being based on height-weight or height-body cavity estimations.

Since we are to deal with body types, I shall attempt to describe briefly the two major types with which we are to deal. I shall use the terminology of Kretchmer, calling the tall, slender individual the asthenic type and the short, squatty individual the pyknic type.

In the asthenic individual we have as outstanding characteristics, the angularity of the profile. If a line were drawn from the top of the head to the tip of the nose and then to the tip of the chin, we would find the profile is exceedingly angular. The neck is long and slender, the shoulders are narrow, the trunk is cylindrical in its formation, the extremities are long and slender with lean muscles, and the fingers are long. There is a scanty distribution of fat and the skin is frequently pale and seems to be of poor nourishment.

As opposed to that, we have the individual of the pyknic habitus, in whom we find that a line drawn from the top of the head to the tip of the nose and chin would almost form a circle. The anterior view of the face suggests a pentagon. The neck is short and full, and a line

drawn from the tip of the chin to the suprasternal notch shows very little angularity, it being a smooth, curved line, frequently a straight line. The head is set forward on smoothly rounded shoulders. The thorax is wider at the base and the abdomen is wider at the level of the diaphragm. There is a deep, well-developed chest, and a deep abdomen. The limbs are short, the arms are short, and there is a good distribution of fat. The skin is usually rosy and appears to be well nourished. These are the two major types.

This brings out the major differences in the asthenic and the pyknic individuals.

We have a third type that is not represented here but which we shall mention; that is, the athletic type. In this individual, we have the broad shoulders, the large bones, well developed muscles, lean, neat lower extremities. He stands between these two individuals in type.

To summarize, the tall, slender individual gives us the impression of an unlesened height, but with a deficiency of volume so that they seem to be taller than they are. In the pyknic individual, we have a marked development of all the body cavities. Of course, the exact determination of any type must depend upon mathematical measures. To this end a number of indices have been developed, all based on relative height-weight or height-body cavity estimations. Wertheimer and Hesketh, in their recent work, correlated their observational findings with exact measurements and found that observation was very accurate.

So much for the comparison of body types. I should like now to consider the work of Mills, roentgenologist, in relation to the bodily habitus and the viscera. In 1917, Mills published a paper on the subject in which he stated as follows: "In any extended observation of different subjects with relation to both their general bodily structure and visceral topography and form, three factors become apparent: first, the great variation in general physique and resulting bodily characteristics; second, the great variation in visceral form, position, tone and motility; third, that certain types of physique are constantly associated with definite types of visceral topography."

Mills proceeded to explain the X-ray findings of both the asthenic and the pyknic types.

He found in the asthenic, "a light, delicate body structure with a long narrow thorax and short abdomen with an especially great disproportion between the pelvic cavity and that of the upper abdomen. The pelvis in the pure as-

thenic is often as wide and as deep as that of one of the pyknic type of more than twice his bodily weight. The intercostal angle is narrow, and, as a rule, there is no ensiform. The lung fields are widest in the upper zones with the apices well above the clavicles. The diaphragm slopes downward. The heart is pendulant with the long axis in approximately that of the median line. The gastro-intestinal tract is low. The stomach is atonic and often largely pelvic with the patient standing. The entire viscus is characterized by coarse haustrations. The degree of tonus is poor and the motility the slowest of any type. The stomach is frequently not empty after six hours, and there is atony of the intestines."

The pyknic habitus is described as having the following characteristics: "Massive and powerful physique with great body weight and heavy bony frame. The most striking characteristic is the short, wide, deep thorax and long abdomen of great capacity in its upper zones. The intercostal angle is obtuse and the ensiform well developed. The lung fields are wide at the base and contract sharply to their apices which project but little above the clavicles. The long axis of the heart is nearly transverse. The alimentary tract is high in position corresponding to an abdominal cavity whose upper cavity is great. The stomach is almost thoracic and of hypertonic or bull horn type. The pylorus is the lowest, or almost the lowest, part of the stomach. The gastric motility is the fastest in any type. The colon is high in position and short. The cecum is well out of the iliac basin, even with the patient standing. The transverse colon is fully transverse and the descending colon proportionally long owing to the relatively high position of the digestive tract. The relative proportions of the colon are characteristic as are its fine, numerous haustrations."

Mills concludes that man is not a creature of fixed physical characteristics, but that an infinite number of variations in bodily physique and in visceral topography, form, tonus, and motility occur and that certain types of physique are constantly associated with certain types of visceral topography, form, tonus and motility.

I should like to say here before I go any further that these types constantly overlap, and seldom, if ever, do we find a pure asthenic or a pure pyknic with all the outstanding characteristics prevalent. There are all sorts of variations. We are dealing here with the two extremes, the major types. I think, however, if your observation is careful, you will be able to

pick out, almost without mistake, the dominating characteristics of the pyknic type and of the asthenic type.

So far, then, we have evidence pointing to two major types: In the one hand, the asthenic, who is always the visceroptotic with a slow-moving gastro-intestinal tract; and on the other hand, the pyknic type, in whom the position of the viscera is high, and in whom the visceral activity is rapid.

I should like now to differentiate between these two types psychologically. It is of considerable interest that investigators who have considered only the anatomical differences have, after a period of observation, arrived at the conclusion that these people also have mental characteristics which occur constantly. Thus, Dr. Laird, a psychologist at Colgate University, after studying the personality traits of a large number of students, noted that there was a considerable relationship between the way his questions were answered and the type of individual who was answering them; that is, the build of the individual who was answering him. His work has now turned into an investigation of trunk volume and length of limb as related to personality traits. Mills, whom I have just quoted, noted also that these two types showed definite psychological characteristics, as well as visceral characteristics.

Kretschmer, in an extensive study of the subject, adds further to the evidence that there are definite body types and that the major types show characteristic mental reaction.

Wertheimer and Hesketh, in the "Significance of the Physical Constitution in Mental Disease," present again a very critical and valuable study on this same subject in which they agree with Kretschmer. Kretschmer's work led to the conclusion that the pyknic type of individual was inclined to develop manic depressive psychoses or circular insanity; whereas, the tall, slender individual developed dementia precox.

Jung, in the development of his introvert and extrovert mental types, noted that the former was usually of the asthenic habitus and the latter of the pyknic type. Many other observers have noted the marked psychological differences corresponding to bodily build, so much so that poets, artists, and authors have given us many pictures in painting and literature of the tall, irritable, sour individual and of the short, fat, jolly gentleman.

Because of limited time, I shall deal only with the asthenic type. As children, the mental

characteristics of the asthenic are not particularly notable, but even here they exhibit the pattern upon which they are about to build their mental lives. As a rule, they are restless, irritable, with a rapid, shifting attention. They are usually very sensitive, a stern word serving the purpose of a whipping. If they are held to a task which demands concentration, there is apt to be a rapidly increasing impatience, which frequently ends in tears or anger, with the task not completed. As they pass on through puberty, there is perhaps more introspection, more day dreaming and usually a pronounced self-consciousness. As adults, the outstanding characteristics are more marked. They form the army of the over-conscientious. They are the fussy, restless, irritable, unstable, and while they may have a perfect poise outwardly, inwardly they are usually seething. Things have to be done just so and just on time. The dishes can't be left in the sink over night. They have to be washed. Dust can't be allowed to remain there; it must be removed at once. The office must be opened on time. If there is an appointment to be kept it is of constant concern until kept, with such questions as, "What if there should be a traffic delay?" or "What if I should have a flat tire?" until they finally have literally pushed the car to the appointed place. It is difficult for them to arrive at decisions. A woman feels she can not go to the theater because she would not be comfortable if she left the children at home. She would not be comfortable at home, because she wanted to go to the theater. Everything is planned in detail. There is frequent uncertainty about this, that, and the other thing: Shall I do it this way, or shall I do it that way?

Finally, if a decision is made, then there is the question: "Wouldn't it have been better had I done it some other way?"

The world depends on them. They can't delegate any of the responsibility to anyone else. They have never learned to think calmly, but they have learned all too well to feel, and their intense emotional life leads them into much trouble. They are restless workers, going from this to the other thing, and then back to the first, usually preferring the delicate, painstaking task.

They are the world's worst procrastinators, putting off until the last minute, and then making a mad effort to complete the task, often failing and then excusing their failure on the basis of poor health.

Many of them are happy to go through life working for praise alone. Socially, they usually

prefer the background; and in conversation, they do more listening than talking, while as for public speaking they find it an ordeal. Socially, they get along all right, but it takes a long time for them to become acquainted and they make friends very cautiously. They are usually very fussy about their personal appearance and personal belongings. They do not lack courage, but in a tight place they frequently blow up.

They over-react emotionally to all stimuli, fear, and its milder components, apprehension and anxiety, being the most common. We see, too, a hyperesthetic disgust.

Crookshank, of England, believes that their fears, and more or less constant anxiety, arise from a constant sense of failure which, in turn, has its origin in the habit of rapid shifting of attention and interests, easy fatigue, new interests and activities, with a repetition of the same process over and over again; until finally they never accomplish anything well, always conscious of a sense of just failing.

One might continue to paint a picture of the mental characteristics, but I have hit the high spots and have dealt only with the asthenic.

The pyknic type presents the opposite. I have come to think of these two types as corresponding to the race horse and the truck horse. Certainly there is an anatomical comparison, and emotionally, and, therefore, mentally (if you will grant a horse mentality), there is a marked similarity. The race horse expends enough energy prancing around before the barrier is raised to carry him around the course. The truck horse, the pyknic if you please, plods steadily on his way with no display of emotion.

Those of you who were in the army have seen the same thing and heard much at that time of the effort syndrome. The tall slender soldier started out with as much zest in the morning as the short squatty one, but you know which was forced to drop out of the ranks for a rest first. They frequently could outrun, outlift, and outsmart the short, deep-chested one, but they could not outlast him. It was not because of the difficulty of the task nor the amount of energy required for the task, but it was because the tall slender individual expended his energy emotionally, whereas the short squatty individual, with his inward poise, expended just enough energy to take care of the task.

This intensity of act and thought is the outstanding characteristic of the asthenic. It is this emotional life which goes on constantly within him which leads to so much difficulty.

We have seen through works of Cannon, Crile, Paveloc, and many others, that the emotional life of the individual influences, immediately and directly, practically all the viscera. As a result of emotional disturbances of an unpleasant sort we have an immediate increase in the heart beat, a rise in blood pressure, a contraction of the small vessels around the intestinal tract, a slowing down and stopping of the movement of the stomach and of the intestines. In other words, everything which has to do with increased voluntary muscular activity is speeded up, while everything which has nothing to do with the use of voluntary muscles is slowed down and stopped.

I have spent so much time in dealing with the major types of individuals and their physiological and psychological reactions, particularly that of the asthenic, because I want to lay a foundation for the statement which I am about to make; namely, that the asthenic individual is essentially the migrainous individual. I do not mean that all asthenics have migraine; but I do mean that where we find migraine we will find the characteristics of the asthenic.

I think if you will review the cases that you have seen and note the cases which come to you, you will agree with me. You will find, as I have, that they are the tall slender type, that mentally they are the fussy and emotionally unstable type, and that physiologically they are the visceroptotic, cold-footed, moist-handed, rapid-hearted, easily fatigued, gas producing, constipated type of individual.

100 cases chosen consecutively from our files show the following figures:

62 cases out of 68 noted were asthenic. Of the other 6, four were noted as being small, one as pyknic, and the other as questionable.

I might state here that this study was not in progress when these details were noted and as a result our charts are often deficient in data just as any charts are.

55 out of 60 noted complained of constipation and gas.

4 complained only of gas.

42 complained of nervousness and 12 came for examination entirely because of this.

58 had gastro-intestinal studies and of these 49 were noted as visceroptotic or spastic bowel. 3 were noted as atonic and having a headache at the time of examination.

Of 12 g.b. studies none were positive.

If our data were complete on these cases, I am sure we would find a higher percentage than is shown here.

Subjecting these individuals to careful questioning brings out their mental habit pattern. Here are some very brief summaries of a number of cases.

Onset of h.a. when had to speak first piece in school. Always a hard worker—never could get a hired man to keep up with him.

Here is a letter from a mother of one child—baby is so cute. He just can't bear to have me leave him one moment. I am up so much nights that I am tired out and at times am almost hysterical, (fine self diagnosis) and am having such severe headaches with vomiting.

Onset h.a. when began to teach. None during vacations.

Onset h.a. after marriage. Husband unfaithful—developed g.c. infection—divorced him and has earned own living since.

H.A. increasing in frequency and severity since birth of only child. Lonely at home on farm. Stays there as companion to mother. H.A. frequent.

Father killed. Pt. and her sister support her mother and another sister who will not work. Resents dependence of sister and the fact that the mother takes her part.

And so on down the list. In those cases where there was increased frequency and severity of the headache I have been able almost always to find some difficult situation, some unsolvable problem, some acute emotional reaction at the time of the increase. These are the people who come to the doctor in order to get relief from the headache. The others come because of stomach trouble, eye strain, or other vague complaints, stomach trouble heading the list. It is of interest that of 100 cases just mentioned only 12 had any diagnosis of disease made other than the common chronic infections as abscessed teeth and tonsils. Of these 12 two showed evidence of active pulmonary tuberculosis, one had pernicious anemia, two syphilis and the remainder showed filling defects diagnosed and treated as ulcers. All showed the mental characteristics of the asthenic.

You will say then that these are the neurotics. Certainly they are the neurotics but here again let me state that not every neurotic is migrainous but that every migrainous individual is potentially a psychoneurotic individual.

This added to ignorance of the supposed disease accounts for the fact these people are the most overtreated and the most mistreated in the world. Surgery of all sorts is resorted to and it is not uncommon to find them cut to pieces. A recent patient from the west coast who had

had headaches all her life had had her teeth, tonsils, gall-bladder, appendix, both tubes and ovaries, her uterus, and finally her hemorrhoids removed at separate operations all in an attempt to cure the headaches. Following this she of course had several operations to remove adhesions but the headaches kept right on coming.

The gall bladder is, I believe, the most common point of attack but I have yet to see the case of periodic sick headaches to be cured by its removal. That does not mean that an individual who has migraine may not have a diseased gall-bladder and be better off without it, nor must we lose sight of the fact that headache and vomiting may be and frequently are symptoms of gall-bladder disease, but I do insist that a careful family history and a careful life history of the patient should be made together with a survey of his or her emotional habits before the gall-bladder is blamed as the cause and removed with a promise of relief.

As opposed to the removal of the gall-bladder the most recent therapeutic procedure consists of the feeding of a high fat diet, somewhat similar to the ketogenic diet used in the treatment of epilepsy and probably suggested by the supposed relation between migraine and epilepsy. I say supposed relation because statistics have failed to establish any connection between the two diseases.

Eye-strain is mentioned as the cause in many cases and it is worthy of consideration in that it may be a source of irritation which is adding to an already unstable and easily fatigued constitution and in turn increasing the emotional disturbances.

Drugs of all types have been used. The nitrous compounds, ergotamine tartrate which inhibits the sympathetic nerves, salicylates, glandular products, adrenalin—one could go on indefinitely.

Miller of Chicago, noting the frequency of asthma and hay-fever in the family histories of migrainous patients, assumed that the cause of the disease was due to some form of allergy and treated them with intravenous peptone in an effort to desensitize them with but indifferent results.

Always we are treating symptoms and not the cause and may be able to give relief from an individual attack but sooner or later along comes another headache.

The cause lies essentially in the emotional life of the individual with its resultant chain of events the chief of which perhaps is the gastric status. Attention has always been directed to-

ward the stomach as the cause of sick headaches and I believe rightly so but the fault does not lie in faulty organs but in the faulty use of normal organs. Perhaps with our highly specialized and delicate chemical analysis we may be able to isolate the end product of the impaired digestive processes or of overtensed muscles and find thereby a chemical antidote, but here, again, we will not be removing the cause.

In order to succeed at that these people must be either properly trained as children to live intelligently indifferent lives or as adults they must be re-educated—a difficult but not impossible task.

The school teacher who has repeated headaches during the school year but who is free from them during vacations; the unhappy wife who is miserable because she can not make up her mind what to do but whose headaches stop when she starts divorce proceedings; the man who has headaches when his business is going badly but who is continually well when things are doing right, and the many other similar histories all illustrate the point I make.

And so I ask you to consider migraine as the end-product of a chain of physiological events arising as the result of emotional reactions in an individual whose anatomical, physiological, and psychological characteristics make it difficult for him to react otherwise, but who, under proper guidance, can be taught to live more comfortably.

May I state that this is but a preliminary survey of a more detailed study now in progress. Thank you. (Applause.)

DISCUSSION

DR. L. J. PANKOW (Sioux Falls, S. D.): I feel that I must say something on this paper because of the fact that I knew the doctor in school and that his classification of types was very true to life. I stand before you a bright and shining example of the one, and my wife, who won't let dishes lay in the sink over night, is a bright and shining example of the other.

I do feel, however, that it would be unfair to allow this excellent paper to go past without some word of commendation. I thoroughly enjoyed it, and I am sure we all did. Personally, it gives me a new slant on the subject of migraine. I run into a few, some severe and some not so severe.

There is one question I should like to ask the doctor, and that is in regard to heredity of migraine. I speak of that particularly because of the fact that one young married woman (who, by the way, is not happy with her husband) gives a family history of having a mother who had a very severe migraine for many years, and that the last headache she had, with no apparent former history of hypertension or anything of that sort, she complained of a severe headache and within a very few minutes was dead.

Whether it was a migraine headache, a hypertension apoplexy, or what, I have no means of knowing.

DR. G. A. CLAUSER (Bridgewater, S. D.): I want to stand up as a victim of migraine, but I am not that way now. So any of you who have migraine know that when you get to be my age you have some hope of getting over it.

I want to make one statement. I would not try to add anything to the excellent paper. I, myself, have had attacks of migraine where I have blown up and felt that I couldn't possibly do a thing at any time, but something very important would come up, I would have an emergency call which would tax me severely, and when I would get through with that call I would discover that my migraine was gone. That has been my experience. I have always considered emotionalism the strongest part of migraine.

I have found victims of migraine who have been just as the doctor stated, chasing from one thing to another, overly anxious, and so forth. I have always found that if they could be kept at what they were doing, they would use every ounce of energy they had.

DR. E. M. YOUNG (Mitchell, S. D.): I should like to ask the doctor if there is a drug that could be used at the time these attacks come on.

DR. RICHARD STANLEY AHRENS (Minneapolis, Minnesota): In answer to Dr. Pankow's question about family history, I think it can be stated that in very nearly one hundred per cent of these cases you will find somewhere in the family history periodic headaches, usually of the sick headache type, or a history of asthma, hay-fever, or hives.

The tendency to headache may be called hereditary but the environment is extremely important for it is from their environment that improper emotional and intellectual habits are derived. I believe there is some hope for them if they can be taught early to lead more comfortably emotional lives.

Dr. Clauser mentioned the fact that his headaches had stopped, suggesting that his age was responsible for his relief. This is less apt to be true in men than women but occurs in both sexes. In women it seems to be definitely related to the menstrual function and one can almost promise them that their headaches will stop during pregnancies and after the menopause. Why? We do not know.

Regarding the use of drugs, aspirin, anacin, combinations of acetilid, and so on, have been used with indifferent success. Once a headache is under way very little can be done for it except rest. Saline cathartics give relief frequently. The patients frequently complain of a "gastro-intestinal deadness" a heaviness with no sensation of peristaltic movement. This actually exists as can be demonstrated under the fluoroscope and a cathartic probably relieves by eliminating stagnant material. It is more effective if used before the headache develops, and if it can be followed by a grain of luminal and an hour or two of sleep the headache may be entirely aborted.

I have found prevention possible over periods of time by the daily use of luminal in half-grain doses t.i.d. This drug does for these individuals what they are unable to do for themselves; namely, helps them to relax, and combining this with a rational

psychotherapy, teaching them to be less emotional is perhaps the best therapy we have at present. (Applause.)

DR. M. C. JOHNSTON (Aberdeen, S. D.): I should like to ask a little more concerning the matter of heredity. Haven't you found, too, that the children of the asthenic types are, as a rule, asthenic, and that where you do find the two different types among the children, it is the asthenic type of child

that has the headaches?

DR. AHRENS (closing): Yes, you will find frequent periodic gastro-intestinal disturbances in the asthenic child. The attention of pediatricians has been called to the relation between the bilious attacks of the child and the migraine of later life. Here, too, we find the excitement of strenuous play, the circus, the picnic, mainly the emotional factor, responsible. (Applause.)

CLINICAL PATHOLOGICAL CONFERENCE

BY E. T. BELL, M.D.

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The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the JOURNAL-LANCET is publishing a series of these conferences. The clinical data are taken from the hospital

records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

G. J., male, admitted to hospital December 15, 1928. He had an upper respiratory infection, starting ten days before admission. He complained of headache, sore throat, stuffiness in his head, and continuous nasal discharge. Shortly after the onset his right ankle became sore, tender, and slightly swollen. Each morning for a week his foot pained considerably but the pain disappeared about an hour and a half after he started working. On December 13, his foot became much more swollen and he had difficulty in getting around. December 15, he began to cough and had progressive swelling of the right ankle.

On admission it was noted that he had a severe cough; his throat was red; the tonsils were inflamed. Blood pressure was 134/84. There was a systolic murmur over the apex and base. The chest was negative except for a funnel-shaped depression over the sternum. The right ankle was swollen from the middle of the foot to a point three inches above the malleoli. The foot was very tender on pressure. There was some stiffness and tenderness on movement of the right knee. There was no history of previous edema nor of dyspnea on exertion, although he had had some palpitation and had been told that he had a heart murmur.

December 16, his heart appeared to be enlarged; the pulse was regular. There was a diastolic murmur. There was a suggestion of Corrigan pulse. There was no Duroziez phenomenon. The blood pressure was 110/64.

On December 22 the case was diagnosed by a staff man as rheumatic fever with true aortic regurgitation. His temperature was 102.4° on admission. It gradually returned to normal by December 23

and remained normal thereafter while he was in the hospital.

December 15, urine showed specific gravity 1023; very faint trace of albumin; pus cells 1 to 2. Blood: hemoglobin 84%; red cells 4,260,000; white cells 11,400; polymorphonuclears 87%; lymphocytes 11%; monocytes 2%. December 28, white cells 12,100; January 12, 1929, 8,600; 70% polymorphonuclears; 20% lymphocytes; 5% eosinophils.

December 15, X-ray department reported acute inflammation of the soft tissues around the ankle joint; no evidence of joint lesion. December 17, X-ray showed transverse measurement of the chest 28 cm.; heart maximum left 11.2 cm., maximum right 1.2 cm.; width of arch 3.5 cm. The heart was displaced toward the left, apparently because of the marked depression of the sternum. It did not appear to be enlarged to any marked degree.

The patient was seen January 12, 1929. He was next seen in the dispensary January 30, with a cold and severe cough. X-rays of the sinuses revealed a definite mucocoele occupying the lower half of the right maxillary sinus. The remaining sinuses appeared to be clear.

February 7, he was again seen and complained of a cold, palpitation, and dyspnea on exertion. Examination showed the lungs clear. The heart was enlarged to the left; there was a to and fro murmur at the base and a rumbling diastolic murmur at the apex; there was no definite conus bulging. The blood pressure was unobtainable in the right arm but was 134/44 in the left arm. He did not return to the dispensary and the following history was obtained from his mother.

He worked all summer and part of the fall, tending a machine, which was not hard labor. He felt well and had no swelling of his ankles. The first part of November he caught cold and had a bad cough, but was able to be up and around. He was told by a physician at this time that he had enlargement of his heart and a leakage of his heart of some type.

X-ray on December 14 revealed very marked enlargement and displacement of his heart to the left, showing evidence of extreme left ventricular hypertrophy.

Patient went to bed December 16 because of cold, cough and weakness. Each day he coughed up about a cupful of fairly thick yellow sputum. He was in bed most of the time from December 16 until his death. He did not think he had any swelling of ankles at any time during this illness. For the last two weeks before death, beginning about December 23, he complained of severe sharp pains over the mediastinum when he swallowed food, especially aggravated when he swallowed a large bolus. This became so severe that he had to roll on his sides to relieve it. When he did not eat he had no pain in his chest. During this time he vomited occasionally.

On December 28 he again called a doctor and complained of profuse vomiting and cough. On January 4, 1930, he was examined; he had edema of his ankles; enlarged heart with no murmurs; there was dullness over both bases with fine râles over the right apex down to the third interspace. His temperature was between 101° and 102° and that day he began coughing up bloody sputum. He did not complain of joint pain. He was admitted to the hospital on January 4 and died January 6, 1930.

Postmortem report: Marked posterior displacement of the lower two-thirds of the sternum which caused displacement of the heart toward the left. The heart weighs 700 grams. All chambers are greatly dilated and hypertrophied, especially the left ventricle. The aortic ring measures 10.5 cm. in circumference (normal 8 to 9 cm.). There is a dissecting aneurism of the aorta which begins about 2 cm. above the aortic valve and opens back into the aorta at the level of the fourth thoracic vertebra. The split in the wall is in the media and the blood circulates mainly through the false passage. The stretching of the aortic ring is due to the aneurism, and the bulging caused by the aneurismal sac produces a definite stenosis of the arch of the aorta. The aneurism did not rupture externally. Death was due to heart failure caused by aortic insufficiency and obstruction of the arch of the aorta. There is no evidence of syphilis or of arteriosclerotic changes in or about the aneurism. Microscopic sections of the wall of the aneurism show a subacute inflammation.

There is relative insufficiency of the mitral, pulmonary, and tricuspid valves, due to the dilation of the chambers. There is marked passive congestion of the liver, spleen, lungs, and kidneys. Atelectasis of the lower lobe of the left lung is present and obviously caused by the enlarged displaced heart. Beginning bronchopneumonia is found.

Postmortem diagnosis: Aortic insufficiency, due to dissecting aneurism of the arch of the aorta.

Comment: Dissecting aneurisms of the aorta are

apparently never caused by syphilis and seldom by arteriosclerosis. The usual cause is infection of the wall of the aorta. In this case the previous rheumatic infection suggests the possibility that the aneurism began as a rheumatic aortitis. In our experience we have never seen any other case of aortic insufficiency due to dissecting aneurism.

The absence of a pulse in the right arm was an important suggestion of aneurism but the aneurism was not demonstrated by X-ray. The Wassermann was not made in this case but the anatomic findings exclude syphilis as an etiologic factor.

G. W., male, 73. Admitted February 5, 1922, complaining of pain in leg, dyspnea, abdominal distension and jaundice. P. I. began July 22, 1921, with jaundice, which persisted. At first he had no pain but complained of loss of appetite, sleeplessness, and dizziness. No abdominal distress before present illness. Noticed light colored stools. Three months before admission he caught cold, had cough and dyspnea, and suffered from a heavy feeling in the chest and palpitation of the heart. The left leg became swollen. One week later the abdomen became swollen. The right leg was amputated a number of years ago following an injury. No previous illnesses.

Physical examination showed dyspnea, cyanosis, jaundice, emaciation, moderate enlargement of cervical lymph nodes. Moist râles at bases of both lungs. Some enlargement of the heart to the left with a systolic murmur at the apex. Peripheral vessels showed moderate sclerosis. Blood pressure 100/85. The prostate was hard. Superficial veins about the umbilicus were dilated. There was ascites.

Patient was tapped on February 7, when 4800 c.c. of fluid was removed. Fluid showed specific gravity 1009; 52 per cent polymorphonuclears; 48 per cent lymphocytes; no organisms. Hard liver edge felt in epigastrium, giving impression of nodular raised surface. On February 19, there was gross blood in the stools. Patient developed conjunctivitis and on March 9 there was an infection of the right eye. Temperature was normal during the stay in hospital except for one day, February 17, when it rose to 100°. Blood: hemoglobin 39-42 per cent; red cells 3,300,000; white cells 8,400 on admission; February 28, 18,000 with 86 per cent polymorphonuclears. There was bile present in the blood plasma. Wassermann was negative. X-ray showed gastro-intestinal tract negative. Electrocardiogram showed left ventricular preponderance.

Death March 10, 1922.

Postmortem report: Intense jaundice. Heart weighs 400 grams and shows moderate left ventricular hypertrophy. Hypostatic bronchopneumonia in both lower lobes. Marked cirrhosis of the liver; weight of liver 1200 grams. The spleen weighs 450 grams. Adenocarcinoma of the head of the pancreas which produced obstruction of the common bile duct. Metastases to the regional nodes about the pancreas. One small metastasis in the liver. Dilatation of the pancreatic duct with areas of fat necrosis in the pancreas.

Comment: This case illustrates obstructive cirrhosis of the liver. The interpretation is that the carcinoma of the head of the pancreas developed to

a point where it caused obstruction of the common bile duct. This resulted in jaundice. The prolonged obstruction caused a cirrhosis of the liver with ascites and collateral venous circulation. This is a comparatively rare form of cirrhosis of the liver.

M. J. female, 34, married. Consulted physician March 11, 1922. Chief complaints: weakness, loss of weight, scanty menses, leucorrhœa. In 1911 a pregnancy terminated in miscarriage, due to pleurisy with effusion.

Physical examination showed fair development; poor nutrition; temperature 98.2°; pulse 84; respiration 18; pallor of mucous membranes; yellowish brown general pigmentation of the skin, most marked over the abdomen. This color was observed by the patient following a severe diarrhea in the summer of 1921. Bronchovesicular breath sounds in the left upper chest and at the right hilus region posteriorly.

May 10, 1921, pelvic examination disclosed restriction of movement of uterus. Rectal examination: several small nodular masses, about 1.5 cm. in diameter, to the left of the cervix, apparently behind the broad ligament.

Urine negative. Feces negative for tubercle bacilli. Hemoglobin 75 per cent; red cells 4,000,000; white cells 7,100.

Blood pressure March 11, 1921, 100/60; March 16, 102/66; March 25, 106/68; April 10, 88/58. At the last examination weakness was very marked and this prevented the patient's leaving home to see a physician after that date. Another physician was called to her home June 2, 1922, who advised her to get up and walk around. She fell over dead after walking 10 feet.

Postmortem report: Moderate loss of weight; brownish pigmentation of the skin. Old healed caseous tuberculous nodule at the left apex; old pleuritic adhesions at the left apex; old healed caseous tuberculosis of the left bronchial lymph nodes. Old tuberculous salpingitis. Extensive bilateral tuberculosis of the adrenals.

Diagnosis: Addison's disease.

Comment: This case presents weakness, pigmentation of the skin, and hypotension. There was a diarrhea about one year before death but there were no gastro-intestinal disturbances in her terminal illness. The old focus in the lung was probably the source of the adrenal tuberculosis.

RADIOLOGY AND THE GENERAL PRACTITIONER*

By IGNATIUS J. MURPHY, B.S., M.D.

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These days every physician and even the dentist has access to X-ray equipment in his office or in the neighborhood hospital. Why the separate little X-ray therapy clause which must be attached to his regular protective policy, costs several times as much as the entire original contract remains without solution. I come in contact with many general practitioners who are as well equipped and qualified to administer what is termed superficial X-ray therapy as any of our big city radiologists; some of these men continue to give their patients X-ray treatments but have neglected to subscribe for what they, considering the volume of their work, term "a penalizing clause." When warned that they lack specific protection they reply that the only X-ray burns encountered in their own or the practice of their colleagues were not due to therapy exposures at all, but from prolonged use of the fluoroscope for gastro-intestinal diagnosis or the setting of fractures. My visits with physicians about the country and contact with patients confirm the observation of these general practitioners.

With modern equipment, properly installed, there is no danger to the patient from any diag-

nostic procedure; at times caution is required when retaking dental films and for the sinus exposures. Physicians are beginning to realize that fluoroscopic fracture work is even more of a risk for themselves than for the patient. Since the screen shadow is both indistinct and exaggerated, more reliance is now being placed in films, before and after correction, for both fracture and foreign body work. Unless the general practitioner has had an opportunity to spend months in a gastro-intestinal clinic, he depends more upon a series of films rather than the fluoroscope for his gastro-intestinal studies. Thus, when he brings an extraordinary patient to the specialist for consultation he may present evidence of long and painstaking study.

PARTIALITY IN RADIOTHERAPY

The ordinary protective policy covers all radium applications, also, all diagnostic X-ray procedures, but excludes any and all use of the X-ray for therapy. For the patients requiring special therapy the physicians in general practice prefer radium to the X-ray; they find the technic for the ordinary radium applications easy to master¹. Likewise, many dentists who formerly employed superficial X-ray therapy to hasten healing after extensive oral surgery, or

*Read before the staff of United States Veterans Bureau Hospital No. 68, November 12, 1929.

where there was a long standing gingivitis, are now utilizing the softer beta ray of radium. Without a huge overhead investment the proper dosage in suitably arranged applicators is on hand, even as promptly as any telephone order for emergency cases. Besides by using radium instead of X-ray therapy they avoid the "penalizing clause" in their contract for medical protection.

The standardization of X-ray therapy for superficial lesions is not as complete as it is for the treatment of the deeper seated conditions². As a rule there are several small areas or one large area to receive treatment; great care must be taken not to injure healthy adjacent skin or mucous membrane nor overdose the lesion. Even in the hands of an expert, a severe and unexpected X-ray reaction occasionally occurs; but in the long experience of the author with both agents no reaction that could be considered a radium burn has been encountered. Perhaps this is due to smaller areas being treated and to the more general use of the less penetrating beta rays of radium. The balance of this discussion will be limited to the more common lesions, which, as a rule, require what may be termed superficial radiation. Cancer of the skin and the oral cavity are of enough importance to merit special and separate consideration.

KELOIDS

Keloids are encountered daily and can be successfully treated by the family physician. These lesions may be given beta rays when recent, or gamma rays when long standing. The spontaneous and acne type respond as well as the traumatic. The earlier hypertrophic scar tissue is radiated, the better the result.

KERATOSIS

Keratosis, usually occurring on the exposed surfaces of elderly people, are commonly handled by the family physician. These lesions have a tendency to become malignant if left untreated. Often when multiple, if sections are made, some will be found to be changing to epithelioma. The size may vary from a split pea to that of several centimeters in diameter. If treated before malignant infiltration begins they respond well to a single erythema of either beta or X-ray.

VERRUCA VULGARIS

Radium has been used by the author for the treatment of the common wart with very gratifying results. The chief advantages over other

forms of treatment are that there is no subsequent infection, freedom from pain, and little or no scarring. Quite often two and occasionally three erythema doses are necessary at intervals of from four to six weeks. Since the technic is quite similar to that of keloids, these radium applications can usually be satisfactorily administered by the family physician, under the supervision of the radiotherapist.

FIBROMA, NEUROMA, MYOMA, AND LIPOMA

Many of these tumors are favorably influenced by an erythema dose of gamma rays. However unless surgery is refused, or contra-indicated, the advisability of trying a second exposure, when the first failed, is doubtful.

CALLOSITAS

Callositas, especially painful plantar warts, responds about as well to treatment as keloids do and to a similar technic. Of course if the cause is not permanently avoided, there is apt to be a recurrence.

LEUCOPLAKIA

That leucoplakia, if left to run its course, will become malignant is recognized by both physicians and dentists. When present on the lip, the buccal mucous membrane, or on the tongue as small patches, it responds well to a single, but proper dose, of beta rays of radium. When present in the urinary bladder some form of electric desiccation works well. Localized patches on the vagina, if numerous, are best treated with gamma rays of radium, if few and discreet, the beta rays are used. Extensive and recurring leucoplakia will not respond to any form of treatment.

In addition to the radium treatment, it is of the utmost importance to eliminate the source of irritation. These cases all require the attention of a specialist.

TUBERCULOSIS LESIONS

The writer has had a great variety of these cases referred to him by private physicians and by the Veterans' Bureau of the Tenth District. Although a few have been stubborn, on the whole results have been very gratifying. When the lesions cover large areas, low voltage X-rays with a filter of from one to three millimeters of aluminum are used. When the area is small, or when the site is inaccessible, radium applicators are more convenient.

Tuberculous adenitis will be considered here because it is often associated with various tu-

berculous skin lesions. Besides, if these glandular conditions are not recognized and radiated early they result in disfiguring scars, keloids, sinuses, and ulcerations. Fortunately to-day most surgeons as well as general practitioners, are referring all their tuberculous gland cases. Accordingly, the present-day radiologist is not often confronted with ugly skin complications resulting from tuberculous adenitis. These cases require both the technical skill of a good radiologist and the best general medical care available.

HYPERIDROSIS AND BROMIDROSIS

Radium or X-ray therapy is the only reliable means of curing excessive sweating in localized areas. Since it is often necessary to prolong the treatment until there is a slight atrophy of the skin, great care has to be exercised, especially if noticeable parts of the body are involved. Fortunately, this affliction is more commonly located in the axillæ or the feet, instead of the hands or face.

In bromidrosis the sites of predilection are the axillæ and feet. The treatment is the same as for hyperidrosis.

PRURITUS

Localized irritated areas accompanied by persistent itching are very common in both men and women in all walks of life. Careful examination of the itching spots shows (a) on the skin circumscribed hyperkeratosis, (b) on the mucous membrane well defined leucoplakia.

When the superficial areas are treated early, a proper beta application of from ten to thirty minutes gives complete relief. When the lesion has been allowed to progress to induration stage, more filtration and a longer time are required. If these are allowed to progress, we usually have a well defined cancer requiring a very exact technic. When extensive areas are involved as in pruritus ani, scroti, or vulvæ, X-rays are used instead of radium.

An explanation is difficult, but it is a well-known fact that such symptoms as itching and even neuralgia respond to radiotherapy, when all other remedies have failed.

PSORIASIS

Stubborn as psoriasis is, no treatment gives the results that proper radiation does. Besides, the patient is spared the inconvenience of smeary, discoloring salves. Apparently there is always some metabolic or focal infection disorder associated. Accordingly, these cases require painstaking study on the part of the referring phy-

sician and careful selection by the radiologist. Quite often the lesion will disappear for months, or years, after a single, or several fractional doses, only to reappear again in a new location. Of course no one promises to cure psoriasis, but it is surprising what results can often be obtained by radiation, plus the correction of metabolic faults and the removal of foci of infection. When the areas are large and multiple, X-rays are used; when small and only a few, beta radiation is the treatment of choice.

ECZEMA

The skin lesions which are grouped under the inclusive term eczema respond well to proper irradiation. Of course the only cases that reach the radiologist are the chronic, or recurrent types, which have resisted the customary medical measures.

RINGWORM, FAVUS, ACTINOMYCOSIS, AND BLASTOMYCOSIS

Ringworm of the scalp can be cleared up sooner by X-rays than any other method. When the patient is apt to be a source of infection for others, this is the treatment of choice. The technic is very exacting as the aim is to produce temporary loss of hair, universal depilation, but no permanent baldness or other injury. Only those who have considerable experience with X-ray therapy are justified in treating tinea tonsurans.

Favus of the scalp is always treated by X-rays. The technic is as for tinea tonsurans. To avoid atrophy, baldness, and other sequelæ of the disease it is very important to make an early diagnosis and begin treatment at once.

Ringworm of the beard may be treated with X-rays or radium. Since most of these lesions reach the radiologist only after they have become multiple or involve the entire side of the face and neck, X-rays are more applicable.

Favus and ringworm of the nails respond to fractional doses of X-rays, or beta rays, more uniformly than to any other treatment. When paronychia is extensive a small area of the healthy skin beyond the inflammatory zone should be reached. As a rule only one or two fractional doses are required; in other cases several applications may be necessary.

Actinomycosis and blastomycosis are very stubborn diseases when attacking the skin. Radium or X-ray is always the choice.

DISEASES ASSOCIATED WITH PYOGENIC ORGANISMS

Furunculosis and carbunculosis respond well to fractional doses of filtered or unfiltered

X-rays and to gamma radiation. These lesions may be treated at any stage; the sooner the better. If treated early pus formation may be aborted. Areas that are subject to recurrences should receive a depilating dose after the initial palliative treatment. Besides hastening resolution, irradiation relieves pain immediately. I have seen patients willingly submit to wide incisions for carbuncles without anesthesia, after pain was relieved by a single fractional dose of X-rays.

Streptococcal infection anywhere in the skin and subcutaneous tissue will obtain as much relief from proper radiation as from any other measure. This is especially true of extremity infections following trauma, palmar abscess, and even erysipelas.

Acne vulgaris responds well to fractional doses of X-rays. Of course it is taken for granted in the case of this and all the other conditions herein discussed, that proper internal, local, and systemic measures are employed in conjunction with radiation. We need not dwell upon the advantages of X-ray in this condition, such as saving of time and the avoidance of smeary and conspicuous salves. Too many physicians are treating this condition too energetically; they overdose; an erythema is not necessary; neither is high voltage desirable. If patients insist upon the family doctor giving these treatments let him be satisfied with one-sixth to one-fourth an erythema of low voltage at intervals of two to three weeks.

Sycosis vulgaris has a long sought specific in radium or X-rays. The usual dosage is as for acne, but repeated at weekly intervals instead of every three weeks. If the patient cannot make arrangements to keep under observation for three to six months, then one is justified in giving doses sufficient to cause defluvium at one setting. The sequelæ of the neglected case overbalance the risk of telangiectasia.

BIRTHMARKS

Vascular birthmarks may be divided into three clinical types: (a) the most common is the so-called strawberry lesions or nevus vasculosus; (b) the irregular purple tumor or angioma carvenosum; and (c) the port wine or nevus flammeus. The diagnosis of each is

only too apparent. Results that seem miraculous are secured by proper application of radium.

Although the general practitioner willingly refers these patients to special clinics, he often delays until the skin has been tanned or toughened by exposure to the weather or to home remedies. He should not only get in touch with the radiologist as soon after birth as the lesion is discovered, but should tell the parents, especially when the lesion is large and complicated, that several treatments involving a number of separate visits over a period of months will be required. Too often we see parents become discouraged because the lesion did not clear up after the first treatment.

We usually make the initial charge cover approximately all the treatments needed and tell the parents that several short exposures at intervals of a month or so will give better results with these birthmarks than a single intensive application.

CONCLUSION

Whether fully protected by insurance or not, no practitioner willingly causes a patient a worry or an inconvenience. Fortunately many pending suits are dropped because the superficial erythema faded and everything appeared normal by the time the trial was called. The prudent man realizes that there is greater danger, especially to himself, in the prolonged fluoroscopic examination than there is in the average treatment for superficial skin lesions. Those practitioners who do not wish to buy the penalizing clause are turning to radium under proper supervision for such patients as can be treated at home.

Physicians and dentists have for some time recognized, and laymen are becoming aware of the fact, that many cutaneous lesions are benefited or cured by radiotherapy. Since the general practitioner correctly regards these skin conditions as local manifestations of some constitutional disorder, in addition to special therapy, he administers other appropriate systemic treatment. Both physicians and dentists are educating the public in every way possible regarding the danger of neglecting chronically irritated areas.

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THE
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 The Minnesota Academy of Medicine
 The Soo Railway Surgical Association
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THE FOURTEENTH ANNUAL SESSION OF THE AMERICAN COLLEGE OF PHYSICIANS

The meeting of this important section in medicine, which is said to present a very fine expose of what medical men know, was held in Minneapolis from February tenth to fourteenth, inclusive, and fulfilled its promise of being what these meetings always have been, a successful session. Internists from all over the United States as well as from other countries, in fact from all over the world, attended the meeting and made it a most interesting one. Dr. S. Marx White, of Minneapolis, presided as general chairman and also acted as chairman of the executive committee. Arrangements were made for the hotel accommodation of all delegates and visitors so that they were well cared for, fourteen hotels being on the list, and the guests were apparently well satisfied with the way Minneapolis took care of them.

Minneapolis, and particularly the Hennepin County Medical Society with its large membership, furnished enough doctors who were able to talk and they all had something worth while to offer. The Hennepin County Medical Society, the State Society of Internal Medicine, and the Minnesota State Medical Association coöperated to make this Fourteenth Annual Session an out-

standing meeting, and extended a warm invitation to the members, associates, fellows and guests for the week of the meeting. Minnesota is looked upon as an educational state, and Minneapolis as the educational center inasmuch as the University is there, with all of its facilities. Glen Lake Sanatorium is included in the group. The Mayo Clinic, of Rochester, provided from its unequalled sources of scientific and clinical work a sufficient number of clinics to make the visiting members very glad they had an opportunity to visit Minnesota.

The time of year at which this meeting was held may have seemed a bit curious, but it was deliberately chosen because of the fact that this time was comparatively free from other medical meetings and consequently the session would not be interfered with but would be given an excellent chance to secure from the country at large a brilliant set of men as contributors to the meeting, among them the following: Dr. S. R. Miller, Dr. J. A. Miller, Dr. N. W. Jones, Dr. J. R. Arneill, Dr. J. C. Meakins, Dr. G. M. Piersol, Dr. A. S. Warthin, Dr. F. M. Pottenger, (of California, who came out to get a little breath of fresh air!), Dr. E. R. Lovelaid, Dr. J. H. Musser, Dr. L. Murray, Dr. G. E. Brown, Dr. J. A. Lichty, Dr. W. G. Morgan (the next president of the American Medical Association), and Dr. C. R. Jones, and, of course, Dr. S. Marx White, the general chairman of the American College of Physicians for Minnesota.

The general business meeting of the American College of Physicians was held at 4:00 P. M., Thursday, February thirteenth, in the Auditorium immediately following the general scientific program of the afternoon, while the Committee on Credentials (Fellowship and Associateship) met at the Curtis Hotel at 9:00 P. M., on February ninth.

Wednesday evening at eight o'clock the convocation exercises were held, at which all Fellows of the College and those to be received in Fellowship were present. A smoker followed the convocation ceremony and an attractive program was presented to the physicians, their ladies and friends.

The Annual Banquet of the College was held at seven o'clock on Thursday evening, February 13, at the Curtis Hotel, and all members present were included in the invitation to attend this banquet. R. B. von KleinSmid, President of the University of Southern California, Los Angeles, delivered the address.

The program of entertainment for the visitors included a tour of inspection of the Gold Medal

Flour Mills and luncheon as guests of the Washburn-Crosby Company. The guests were provided cars to take them to the mills and return them to their hotels. In the afternoon a gallery talk and tea at the Minneapolis Institute of Arts provided further entertainment for the visiting ladies, and in the evening they were entertained at the Shubert Theater.

At the University Hospital, in the Todd Amphitheater, on Tuesday morning, February 11, a series of medical talks were given which gave the visitors a chance to see what we have in Minnesota in the form of a hospital clinic. Studies in malnutrition were given at the Institute of Anatomy, University of Minnesota. Dr. N. J. Berkwitz gave a talk at 9:30, on Tuesday morning, on "Toxic Myelitis of Pregnancy, with clinical pathological findings," although his name was inadvertently omitted in the program. Clinics were also given at the Minneapolis General Hospital, in the basement and clinic rooms on the basement floor, and many people took advantage of the program offered and visited the Minneapolis General Hospital. Clinics were also given in the Hennepin County Medical Society rooms on the twentieth floor of the Medical Arts Building, so apparently Tuesday was a very busy day for those attending the meeting, as St. Mary's Hospital, Swedish Hospital, and Northwestern Hospital also presented clinics and medical talks on that date.

The meeting was brought to a close on February 14, and it is hoped that all who attended the Minneapolis Session of the College found it an informative and profitable meeting.

THE UNIVERSITY HOSPITAL, THE COMMUNITY, AND THE PRACTICING PHYSICIANS

About a year ago Dr. Henry S. Houghton, Dean of the College of Medicine of the State University of Iowa, presented at the Annual Congress on Medical Education and Medical Licensure a very able and comprehensive paper on the subject named above, a subject that interests all physicians who reside in cities in which or near which a medical school is conducted by the State. This paper so impressed the editor that he asked Dean Houghton for a copy of it, and it is presented herewith for the benefit of our readers, all of whom are vitally interested in the problem.

Of the class A medical schools in this country approximately one-half are maintained by endowment and private beneficence, the other half by subventions from the state which they serve. Their

educational problems and objectives are essentially identical, their methods of operation differ widely. Each system has its peculiar advantages and its inherent difficulties. This brief communication is designed to present a cross section of what may be considered a typical program of medical education established and maintained solely by state agency.

There are three ways in which the operation of a university medical college and its hospital are particularly affected by the degree to which it is integrated with state education. In the first place the basis of finance offers a contrast: generally speaking, institutional support from the state is likely to be meagre but dependable. Private philanthropy is often more liberal, but the fluctuations of income from these sources is too often a matter of embarrassment and concern to administrators. While in theory the resources of a state institution are subject to the fickle will of succeeding legislatures, it seldom happens that a deserving enterprise is left to drift helplessly. On the other hand, it is true that the financial scale on which these state projects are operated will be made to conform to the general economic level of the commonwealth, and their garments must be cut from the financial fabric of the state, larger or smaller as prosperity flows or ebbs. There are, secondly, certain other ways in which educational machinery revolves in a state school differently from the private medical college. One of the most perplexing problems lies in the selection and admission of students. A medical school dependent upon and responsible to the state has always to take into account the explicit and implied rights of the taxpayer to all of the education which the state furnishes, provided the minimal requirements can be met. Numerical limitation is difficult; selective discrimination between candidates is almost equally so. In some states a conscientious effort has been made by legislative enactment to protect selective admission, but they are frail barriers.

Thirdly, clinical teaching facilities in a state supported medical school not infrequently present highly unusual features. This is particularly so in Michigan and Iowa where the colleges of medicine are completely integrated with the State Universities, maintaining their entire course of instruction in physical connection with the University as a whole, and carrying on their entire hospital program in a small town.

So much for the general premises. The College of Medicine in the State University of Iowa has had to deal with the foregoing conditions during the past decade or two, and an analysis of its adaptations to them is presented for the light it may shed on the changing order in medical education and practice.

In 1915 the General Assembly of Iowa enacted a law which provided medical and surgical care of children from the State who are afflicted with any malady or deformity for which treatment offers relief, and whose parents or other persons chargeable for their support are unable to provide such treatment. This is known as the Perkins Law.

Two years later, in 1917, the succeeding Assembly passed a parallel bill extending the same treatment to adults, an enactment since known as the Haskell-Klaus Law.

The 1924 Code of Iowa, compiled under direction and approval of the Fortieth General Assembly, combines these two laws into a single chapter.

The main features of this combined medical service statute are as follows:

- (1) Complaint—by any adult resident.
- (2) Examination and Report—by physician.
- (3) Investigation and Report—by County Attorney.
- (4) Order of Commitment.
- (5) Emergencies—an exception.
- (6) Admission—to be received when room is available, except when dangerous to other patients, or unlikely to be benefited. Cf. Adm. officer.
- (7) No professional compensation to doctors, nurses.
- (8) Expenses—Law paid. Warrants drawn on the State Treasurer and by him paid from funds not otherwise appropriated.
- (9) Transportation—State provision. Attendants, etc. The law itself is framed with clear simplicity. There is no multiplication of detail or red tape, and administrative processes used in carrying out its provisions, as far as the hospital is concerned, are left to the rulings of the State Board of Education.

Approximately 85 per cent of the patients treated in the University Hospital are those who have been committed by Court order. Of the remaining 15 per cent, two-thirds, or a tenth of the entire clientele, are what is known as cost patients. These are individuals who testify that they have sufficient means to pay only the basic hospitalization rate, and cannot afford professional fees. They are admitted only when sent in by their physicians, who certify as to their inability to pay for private professional care.

Five per cent of the whole number of patients are private and pay cases—those who can pay a professional fee, either directly to the part-time physician whose service they enter, or to the University, if admitted to one of the full-time clinical departments.

It would seem, theoretically at least, that there is here a well nigh ideal arrangement for the dual purpose of furnishing skilled and effective treatment to indigents, and of supplying necessary clinical teaching material to medical students. Large numbers, and a wide variety of cases are available. The physical location of such a hospital in a small city with reasonably convenient access from different parts of the State, on a site which provides a maximum of sunlight and pure air; a system of financing which involves no deficits in operation—all these factors strongly favor such a plan. I am convinced, indeed, that its advantages outweigh its imperfections, for reasons which appear below.

During the ten years and more in which the law has been operative in the State there has not been, however, a unanimous approval of it. Much of the criticism has come from physicians, some from legislators and county officials. The State Medical Society eventually took an attitude of concern, if not actual hostility, toward the Medical College and University Hospital.

The principal objections urged are as follows:

- (1) The law is abused by those able to pay.
- (2) There is an inequitable distribution of costs, since remoter and purely agricultural counties,

although paying the same tax rate, receive proportionately much less service than areas with large populational centers, especially if close at hand.

- (3) There is a perilous prospect for the practicing physician in the building up of a centralized medical service under State support and control which competes with private enterprise.

It is the belief of the administrative officers of the University and Medical College that enduring success in any state education program of this kind can be attained only by following policies which will commend themselves fully to the organized profession, and secure their good-will and active co-operation. The growing discontent with the medical service machinery has been therefore a matter of serious concern to the Board of Education and the University authorities. A series of friendly conferences has been held with the officers of the State Society and with county societies, and the difficulties have been carefully studied. The University's policies and objectives have been restated, and most of the points at issue have been settled.

Specifically, the attitude which the College takes toward the criticisms mentioned is as follows:

1. In any service law of a state-wide character, occasional infractions of the spirit of the statute occur, since the human chain by which it works is comparatively long and carelessness or negligence on the part of one of the links may result in abuse. On the other hand, proper administrative procedures and eternal vigilance will minimize these few miscarriages of the law. A statement from the examining physician as to the prospective patients' incapacity to pay, for example, is now called for on the blanks, and a property statement under oath is required. All reported or rumored cases of evasion of the law are quietly and thoroughly checked up.

2. It is true that some counties receive more care for their indigents than others, while all share alike in the tax assessments. But this is true of most of the great centralized enterprises of the State. To distribute the hospitalization costs according to the counties furnishing the patients would raise so many practical difficulties that the Board of Education is reluctant to attempt it. It may be, however, that a plan whereby the costs are divided between State and county can be worked out satisfactorily, in time.

3. The most important question to be answered, after making sure that the Community of the Commonwealth is properly and adequately cared for by a state-wide service, is whether or not it is really a menace to the private practice of physicians.

One realizes that changes are appearing all over the country in the conditions under which medical care is provided, particularly for people in moderate circumstances. There is a growing pressure to socialize medicine, to centralize, to institutionalize, and to subsidize, in the interests of furnishing the great middle fraction of the population with competent care at low cost. Whether or not these pressures will result eventually in reasonable and constructive medical socialism it is difficult to tell. Our main concern in connection with this Iowa plan is to make certain on the negative side, that it does not in fact invade the legitimate practice of the physicians of the State, and that it does not tend to

bring about abrupt changes in the social and economic order which would affect the services now given to the community by regular physicians. On the positive side we are equally anxious to develop a system in which physicians will co-operate cheerfully and helpfully: which will supplement their work instead of undermining it, and to which the great state organizations concerned with medicine—the University, the State Medical Society and the State Department of Health—may contribute a share in a unified and comprehensive program of curative and preventive medicine, teaching, and productive research. This is a practical and attainable objective, we believe, but it involves careful adjustment of interests, and clear-cut divisions of function.

Certain undertakings have been made by the University for the protection of physicians' interests:

1. Limitation of private and pay cases.

It does not seem feasible to eliminate altogether access of tax payers to the services of a state hospital when they are able to pay for services rendered. On the other hand, it is in order to restrict the facilities for handling them on the ground that the principal function of the hospital is teaching—to which their presence does not contribute. The new University Hospital has accommodation for private patients amounting to, roughly, 5 per cent of the total capacity.

2. Establishment of fee funds.

If the hospital or clinical departments were to be dependent upon the earnings of the full-time staff for their support, it might properly be said that State medicine had been established in principle, and could be indefinitely extended to the injury of private practitioners. In Iowa, however, the income from full time departments reverts to the University, being available under certain circumstances only for scientific projects of the departments concerned, and then only as extra-budgetary grants.

3. Full-time and part-time.

This burning question has not given us much concern in Iowa. The College has every gradation from remote part-time to complete full-time represented on its staff, dwelling in amity together. As a general policy, it is believed to be unwise to attempt any coercion toward a full-time basis, but desirable on the other hand, to provide attractive conditions for full-time workers when able teachers are interested in such a relationship. The important point is to avoid putting upon full-time teachers a responsibility for institutional money-making, and to make sure that part-time teachers are those whose primary interest and preoccupation is teaching.

4. Relations with organized medicine.

With a clear-cut program which is carefully built up to serve a state community through medical care of the worthy poor, to furnish a high type of professional education to its citizens, and to safeguard the general profession from sudden and disruptive socialistic changes, there seems to be no reason why an effective partnership cannot be formed between all of the great agencies in a State which are concerned with medicine.

THE UNIVERSITY MEDICAL SCHOOL

We have been confronted with a new problem for the University. Dr. F. L. Adair is in Chi-

cago teaching obstetrics, and now word comes to us that Dr. F. W. Schlutz, head of the pediatrics department of the University of Minnesota Medical School is to go to Chicago to open an office and practice medicine there. He has been connected with the University of Minnesota in the department of pediatrics for sixteen years, and he will be very much missed in his chair at the University.

Dr. Owen H. Wangensteen is to succeed Dr. A. C. Strachauer in the department of surgery, which was formerly headed by Dr. J. E. Moore. Dr. Wangensteen has been in training for this work for a long time both by the Mayo contingent and under special training so that he is now elevated to the head of the surgical department of the University of Minnesota Medical School. Everyone speaks very well of him, thinks he is a fine fellow, and one who will make everyone welcome who comes to the department. He bears the degrees of M.D. and Ph.D., the latter conferred on him in 1925. He has been quietly going on with this special training for three years and has been in Europe for two or three months where he took special work in the clinics there,—all of this preliminary to relieving Dr. Strachauer who has occupied the position as chief of the department of surgery since the death of Doctor Moore. At the same time Dr. Strachauer has been at the head of the department of cancer, the Memorial Cancer Institute. However, Dr. Strachauer will retain a University connection as director of the Cancer Institute, and he was instrumental in obtaining the gift which endowed the Institute through the Citizen's Aid Society. Much attention should be given to the Cancer Institute as a memorial to the son of George Chase Christian, and Mrs. George Chase Christian is president of the board of trustees of the society. Dr. Wangensteen is a native of Minnesota, Lake Park having been his boyhood home.

Since the construction of the Cancer Institute and the further enlargement of the University facilities due to the construction of the Eye, Ear, Nose and Throat Pavilion known as the Todd Memorial Unit (and those who remember him as Dr. Todd will remember he was Dr. Frank Todd), and the Eustis Hospital for orthopedic and pediatric cases, the number of surgical fellowships in the Medical School has been increased from one to five; of these, three are surgical residents in University Hospital, and two are on laboratory service. All these men change from one division to another and also in the course of their training spend one year at the

Mayo Clinic, Rochester.

What are we to do with the Medical School if the faculty gradually go to Chicago? Of course, this is all in the passing of time, the passing of events, and the passing of individuals. It may seem rather strange but it has always been so, that at various and stated intervals the units of any institution are changed by reason of death, by individuals accepting work in other institutions, and various happenings.

NEWS ITEMS

Dr. Carl P. Friberg, who formerly resided in St. Peter, Minn., and who was head of a hospital in China and a medical missionary, died there recently.

Dr. and Mrs. N. W. Haddow, of Minneapolis, Minn., departed February 1, for a trip to Southern California, where they will spend the rest of the winter.

Dr. N. O. Pearce, Minneapolis, was elected president of the Hennepin County Tuberculosis Association at the twenty-seventh annual meeting, Thursday, January 30.

Dr. Paul B. Cook, of St. Paul, Minn., died January 9, in Miami Beach, Fla. Dr. Cook was 54 years old and was graduated from the University of Minnesota in 1900.

Dr. Edward M. Elsey, son of Dr. and Mrs. J. R. Elsey, has returned to Glenwood, Minn., and in the future will be associated with his father in the operations at the Glenwood Hospital.

The addition to the Sioux Valley Hospital, in Sioux Falls, S. D., will be ready for its formal opening some time between March 15 and April 1. Dr. A. O. Fankalsrud is superintendent of the hospital.

Dr. George A. Gray, late of Spokane, Wash., and formerly a resident of Minneapolis, died in Honolulu, February 1. He was a graduate from the University of Minnesota School of Medicine in 1898.

Dr. J. R. Ostfield, of Rockham, S. D., and Dr. Jesse P. Farrior, of Goldboro, S. Carolina, have accepted positions on the medical staff of the North Dakota State Hospital for the Insane, at Jamestown, N. D.

Dr. Robert S. Madland, of St. Paul, Minn., has opened his offices in Pequot, Minn., for the practice of medicine. He has been associ-

ated with Dr. Edgar Norris in the Lowry Medical Arts Building in St. Paul.

Members of the Douglas County Medical Society in meeting were addressed by Dr. Francis D. Murphy, Professor of Medicine in Marquette University and Clinical Director in Milwaukee Hospitals, on Friday, February 7.

Dr. W. C. Fawcett and family, of Starkweather, N. D., left January 2, for a sojourn in Miami, Florida. They will return about April 1. Dr. Fawcett's practice in the meantime is being taken care of by Dr. L. J. Bowman.

Dr. Alonzo J. Buffaloe, who practiced at Mitchell, S. D., for 25 years, died in Sioux Falls, January 31. He was 71 years old at the time of his death, which is believed to have resulted from injuries received in a fall a month ago.

Dr. Lee W. Smith, of Butte, Montana, was elected president at the semi-annual meeting of the ear, eye, nose and throat surgeons of Montana, which was held at Anaconda on Tuesday, January 21. Dr. J. G. Parsons, of Lewistown, was elected secretary-treasurer of the organization.

Dr. T. J. Trutna, of Silver Lake, Minn., was re-elected president and Dr. A. H. Jensen, of Hutchinson, secretary-treasurer, at the annual meeting of the McLeod County Medical Association, held at Hutchinson, Minn., January 27. An interesting address was given at the meeting by Dr. F. A. K. Schaaff, of Minneapolis, who spoke on "Lesions of the Heart."

Dr. M. J. Fardy was elected President of the Northwest District Medical Society, held January 30, at Minot, N. D. Dr. S. J. Hillis, of Perthold, was elected vice-president and Dr. J. R. Pence, secretary and treasurer. Dr. L. H. Kermott, Dr. A. R. Sorenson and Dr. A. D. McCannel were named on the board of censors and Dr. Sorenson and Dr. Andrew Carr were selected as delegates to the convention of the North Dakota Medical Society which will be held in Bismarck sometime in May.

We regret to have to announce the death, on the 25th ult., of Dr. Robert M. McLean, of Gilby, Grand Forks County, North Dakota, after practicing continuously at this place for the past 38 years. Born in Winnipeg, educated in the public and high schools of that city, he graduated from the University of Manitoba in 1891, and immediately came to Gilby where, practicing his profession, he gained the love and

respect of a large neighborhood, who at each birthday for many years have voluntarily congregated at his home to tender their anniversary congratulations.

We have heard with great pleasure that a group of medical practitioners had entertained Dr. Adolph Hanson, of Faribault. That is indeed the right spirit—to lift and encourage. Dr. Hanson has at all times demonstrated that he is a true medical man, a hard worker, idealistic, and absolutely true. We admire his wonderful slides and wish him to succeed in his labors. He has certainly opened up new thought paths, whatever may be his end results. Let each of us do all we can to aid him, at least, with all possible good will. We must not forget that we already have from Hanson the Parathyroid Hormone.

Dr. and Mrs. P. D. Peabody were host and hostess to the members of the Whetstone Valley District Medical Society at their home Monday evening, giving a dinner for the doctors and their wives, January 27. Papers were read by P. R. Scallin, of Clark, S. D., and Dr. A. L. Reed, of Peabody Clinic. The officers for the ensuing year elected for the Twelfth District were: Dr. H. C. Peabody, president; Dr. C. M. Peterson, of Sisseton, vice-president; Dr. Faris Pfister, secretary and treasurer. Dr. L. N. Grosvenor, of Huron, president of the State Medical Society of Huron, was in attendance and other members from out of town were Dr. J. F. D. Cook, of Langford; Dr. A. E. Bostrom and Dr. A. P. Hawkins, of Waubay; Dr. J. A. Jacotel, Dr. E. O. Church and Dr. A. E. Detunck, of Milbank; Dr. C. M. Peterson, of Sisseton; Dr. A. W. Pearson, of Peever; Dr. H. G. Harris, of Wilmot and Dr. P. R. Scallin, of Clark.

About forty members and guests were present at the Annual Banquet of the Aberdeen District Medical Society which was held on Tuesday evening, January 30, 1930. The following program was presented: 1. Presidential Address, "Education in Medicine," by Dr. C. G. Lundquist, Leola, S. D. 2. "Diagnosis and Medical Treatment of Peptic Ulcer," by Dr. Lowell D. Snorf, Chicago, Ill. 3. "State Medical Affairs," by Dr. L. N. Grosvenor, President State Medical Association, Huron, S. D. The following officers were elected for 1930: President, Dr. R. D. Wilson, Aberdeen; vice-president, Dr. G. E. Countryman, Aberdeen; secretary-treasurer, Dr. R. G. Mayer, Aberdeen (re-elected); delegates,

Dr. M. C. Johnston, Aberdeen (1930-31), Dr. R. G. Mayer, Aberdeen (1930), Dr. J. E. Dunn, Groton (1930); alternate delegates, Dr. W. A. Bates, Aberdeen, Dr. J. D. Alway, Aberdeen, Dr. E. A. Pittenger, Aberdeen; board of censors, Dr. J. F. Adams, Aberdeen (1930-31-32), Dr. M. C. Johnston, Aberdeen (1930-31), Dr. F. J. Kraushaar, Aberdeen (1930-31).

Dr. S. Marx White, Minneapolis, former chief of the department of medicine at the University of Minnesota, was chosen as president-elect of the American College of Physicians at their annual meeting in Minneapolis. He had served for the last two years as first vice-president and at the expiration of the term of Dr. Sydney Miller, of Baltimore, in 1931, he will be automatically advanced to the presidency.

CLASSIFIED ADVERTISEMENTS

Exercising Machine for Sale

Exercising machine never been used will be sold for half of list price. Address 669, care of this office.

Practice for Sale

Country practice for sale in Eastern South Dakota. Good reasons for selling. Address 681, care of this office.

Ultraviolet Ray Lamps for Sale

Three Ultra Ray Lamps. All brand new and will be sold at half price. Description and prices can be had by addressing 668, care of this office.

Internist Wanted

Opening for well-trained man in South Dakota clinic. Exceptional opportunity for future available to right man. Address 688, care of this office.

For Sale

One Luxor Mercury Lamp used only a few hours. Is in good condition. Suitable for 220 voltage. Price \$60.00. Address 686, care of this office.

For Sale

Complete outfit of surgical instruments and equipment. Must be sold at once to close estate. Can be seen at 953 Medical Arts Bldg., Minneapolis.

Physician Wanted

Resident physician wanted for Eitel Hospital, Minneapolis. Salary and maintenance. Write or call Dr. H. E. Stosel, Supt., Eitel Hospital, Minneapolis.

Wanted—Locum Tenens Work

General practice, in North Dakota, Minnesota, Iowa or Illinois, during the coming spring and summer, by an experienced and well-qualified physician of correct habits and good reputation. Address Box 685, care of this office.

Laboratory Technician Wanted

Well-trained girl, capable of performing Kahn test, basal metabolism, blood chemistry, and preferably, but not necessarily, X-ray work. Excellent future in South Dakota clinic. Address 689, care of this office.

Physician Wanted

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SPECIAL POINTS IN THE TREATMENT OF DISEASES OF THE THYROID GLAND

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Cleveland Clinic

CLEVELAND, OHIO

In this era of preventive medicine in which we are living, the problem of the prevention of diseases of the thyroid gland is of especial importance to the general practitioner, not only in the prevention of endemic goiter, but also of other diseases of the thyroid gland, such as malignant tumor and cretinism.

CRETINISM

Fortunately, true cretinism is uncommon in the United States. Gordon, in 1921, collected 280 cases and Osler had previously reported 60 cases. Gordon concluded from his study that in this country cretinism is not confined to the goiter belts.

Cases of cretinism may be divided into two groups: those in which a goiter is present, and those in which there is no goiter. In Switzerland, cretins frequently have goiters which reach considerable size. It is interesting to note that in these cases the stature of the patient is frequently greater than in cases in which goiter is absent.

The stature and mentality of patients with cretinism depend upon the age at which the thyroid deficiency develops. If the thyroid is practically absent at birth, but little mental or physical development will take place. Frequently the symptoms of cretinism are not manifested, and therefore the presence of the disease is not

suspected until the child is eight months old. The theory has been advanced that the infant receives enough iodine from the mother's milk to offset the thyroid deficiency.

The diagnosis of cretinism, although sometimes relatively easy, is occasionally difficult because of the associated polyglandular deficiency. Cretinism must be differentiated from Mongolian idiocy, pituitary dysfunction, achondroplasia and rickets.

DeQuervain states that cretinism can not be cured by thyroid medication, although some improvement can be secured by the administration of thyroid extract. He feels that the prophylactic use of iodine might be helpful in decreasing the incidence of cretinism, but he also realizes that no definite conclusions can be drawn concerning the efficacy of this treatment until twenty or twenty-five have elapsed.

ENDEMIC GOITER

Certainly, surgical intervention is necessary at the present time in many cases of goiter, but the general practitioner is especially interested in the prevention of thyroid enlargement, as this is the surest way to reduce the need for operation in the future.

In Ohio we are in the center of the goiter prevention movement. The work of Marine and Kimball in this field is of outstanding merit.

Tichen and Mason have published the results of a survey of 4,000 school children in which two groups of cases were studied. In the first group, which was comprised of 2,000 children, sodium iodide was used, ten doses of three grams each being administered twice a year. At the beginning of the experiment, 57 per cent of the children in this group had a demonstrable enlargement of the thyroid. In not a single case of the remaining 43 per cent did an enlargement develop during the period of observation, while in 38 per cent of the cases in which an enlargement was already present, the size of the gland decreased. In the control group of 2,000 children who received no medication, a definite goiter developed in 16 per cent of the cases in which the thyroid was normal at the time of the initial examination. Among the children who were treated with sodium iodid, symptoms of induced hyperthyroidism appeared in only 5 per cent of the cases, and in these cases the symptoms disappeared when the iodine was discontinued.

As the result of the prophylactic use of iodine, the incidence of simple goiter in Seattle has fallen from 25 per cent of the population in 1915 to 4 per cent in 1926. Figures such as these surely demonstrate the efficacy of goiter prevention in children.

Iodine medication may be continued in small doses throughout the period of adolescence. Iodostarin tablets, each of which contains 10 mg. of iodine, are recommended for this purpose, the dose being one tablet a week during the period of school age.

HYPERTHYROIDISM IN CHILDREN

Very few cases of exophthalmic goiter in children have been reported in the literature. Helmholtz recently reported 40 cases from the Mayo Clinic, in one of which the symptoms were first noticed when the child was eleven months of age. Klein, in a review of 3,477 cases of exophthalmic goiter, collected 184 cases in children under 15 years of age, and Burford, in reviewing the American and foreign medical literature, found, in a total of 1,512 reported cases, eight cases of exophthalmic goiter in children under five years of age, and 18 cases in children under twelve years of age. At the Cleveland Clinic we have seen 55 cases in children under 15 years of age, the youngest patient being five and a half years old; another child, whose symptoms dated back three and a half years, was seven years old.

The etiology of exophthalmic goiter in chil-

dren is difficult to determine. The mothers of eight of our patients had definite goiters, and in two of these cases the goiter was associated with hyperthyroidism which had developed, in one case, during pregnancy. In a few cases the child had had an antecedent infection such as measles, scarlet fever or whooping cough, and this infection seems to have been the predisposing factor.

In cases of hyperthyroidism the onset of the symptoms is abrupt. The first symptom is nervousness, followed by enlargement of the thyroid, palpitation, tachycardia and exophthalmus. Later, the typical symptoms of hyperthyroidism develop—enlargement of the thyroid, thrill and bruit.

The determination of the basal metabolic rate is confusing, as divergent opinions as to what constitutes a normal pre-adolescent or adolescent reading, exist. Cameron studied this problem for three years and concluded that the findings of Talbot and Benedict, based on the body-weight principle, are too low in the case of children. He suggests that estimations should be based on the height rather than on the weight. He also advises that repeated tests be given, as the excitability and apprehension of the child alter the true results.

In cases of hyperthyroidism in children it is our practice to ligate the superior poles of the thyroid. Children respond to this treatment, usually better than do adults—and in twelve weeks they are in a definitely better condition for thyroidectomy. An interesting point in connection with operative technic is that it is not necessary to remove as much thyroid tissue from children as from adults. In one of our severe cases, mild hypothyroidism developed after lobectomy. This is the only case in this group in which we have seen symptoms of hypothyroidism following operation.

X-ray treatment of toxic goiter: Approximately 2,000 patients with goiter pass through our clinic yearly, and over one-half of this number have hyperthyroidism or exophthalmic goiter. In the case of many of these patients various types of treatment have already been tried. During the past two years X-ray treatment has been used frequently. Jenkinson is optimistic concerning this type of treatment and advocates it for all patients who are free from pressure symptoms. Dunham also advises it. We are impressed, however, by the lack of statistics and reports of end results in these cases. Sanger's figures are well compiled and show that a cure has been effected in 82 per cent of his cases;

however, 11 of the 41 patients studied still have an elevated basal rate, and can hardly be regarded as cured.

There is one argument against treatment by X-ray in cases of hyperthyroidism. The time element is important since visceral changes are progressive, and if radical treatment is too long delayed, an acute condition may develop. In the past two years we have seen 25 such cases in which the patients have died in spite of all measures which were instituted.

Again, the end results secured by operation are dependent frequently upon the duration of the disease and the visceral changes present, so that it is most important that operation be performed early. Sometimes temporary benefit is secured by X-ray treatment, but the end results secured by surgical treatment are so excellent that we do not hesitate to recommend it as the primary form of treatment.

Time of operation: The question as to when operation should be performed in the case of a bad risk patient, is frequently asked. Pre-operative therapy, which, unfortunately, I have not time to discuss in this paper, is instituted until the patient is in a condition which is compatible with operation. In a case of hyperthyroidism associated with hyperplasia of the gland, the administration of Lugol's solution and of digitalis makes operation possible within ten to twelve days; in a case of hyperthyroidism associated with an adenoma, within from five to seven days. Lugol's solution has been found to be equally efficacious in all cases of hyperthyroidism, and following its use the same structural and microscopic changes in the thyroid gland are demonstrable in cases of adenoma as in cases of exophthalmic goiter. The basal metabolism test as an index to the proper time for operation is frequently deceptive, as patients with a low basal metabolic rate sometimes have a much more severe reaction than do patients with a high rate.

Type of operation: Opinions as to the advisability of multiple-stage operations are divided. Ligations are most effective in children and in adults who have a small gland with a thrill and bruit; however, since the use of Lugol's solution has been adopted, ligations have not been necessary in more than one and a half or two per cent of the total number of cases. In the case of an exceptionally poor risk patient whose goiter is large and extends across the trachea, a single lobectomy is sometimes performed first, to be followed later by the second lobectomy. A very good rule is, "When in doubt, do a multiple-stage operation."

ADENOMA

If a case of adenoma of the thyroid is left untreated, any of the following developments may take place: The goiter may (1) remain stationary; (2) increase in size and cause pressure symptoms; (3) become toxic; (4) undergo cystic degeneration; (5) become hemorrhagic; (6) become malignant. Operation is advised, therefore, not only for cosmetic reasons but also because of the danger of the development of these various conditions.

MALIGNANT TUMORS

At the present time, between two and three per cent of all thyroid operations performed in the Clinic hospital are for carcinoma, and de Quervain states that 4 per cent of his thyroid operations are for malignant growths. Our series of cases of carcinoma of the thyroid includes approximately 250 cases, or about 1.6 per cent of our total series of cases of diseases of the thyroid gland.

The following types of neoplasm are found in the thyroid; scirrhus carcinoma, papillary carcinoma, lympho-sarcoma, sarcoma, and carcinoma-sarcoma. Graham believes that in 90 per cent of the cases of carcinoma of the thyroid gland the growth has arisen from an adenoma.

The youngest patient in our series of cases of malignant tumors of the thyroid was 15 years of age, the oldest was 83, and 54 per cent of the patients were between 50 and 70 years of age. In 78 per cent of the cases the enlargement had been in evidence for more than two years, and in 72 per cent of the cases it had first been noted either at puberty or during pregnancy. The male patients in our series had been aware of the growth for only a few months, and it had enlarged more rapidly than in the cases of women.

The clinical picture of carcinoma of the thyroid gland is typical. The patient is usually past middle age. He has a solitary tumor on either side of the neck, which has enlarged rapidly. On examination, this growth is found to be hard, and it may be fixed. Hoarseness, due to paralysis of the vocal cords, and symptoms of pressure may be present. The most frequent complaint is choking and a sense of constriction; pain does not appear until later. The symptoms increase steadily in severity.

A malignant growth may appear in a toxic gland. Simpson found this to be true in one-half of his cases of carcinoma, and symptoms of hyperthyroidism were present in 22 per cent

of our cases.

Metastasis to the chest had occurred in 6 per cent of our cases. Simpson found metastasis chiefly in the lungs and bones. When metastasis has occurred, the prognosis, of course, is hopeless.

In the majority of cases of malignant disease of the thyroid gland, a clinical diagnosis of a malignant growth is not made. In 54 per cent of our cases, malignancy was not suspected. An analysis of our cases shows that a clinical diagnosis of malignancy had been made in only three per cent of the cases in patients under 30 years of age, in 40 per cent of those between 30 and 50 years of age, and in 80 per cent of those over 50 years of age. Only 31 per cent of the cases in which a clinical diagnosis of malignancy was made were considered operable.

Results of treatment: The best results are secured, of course, in cases in which the diagnosis of malignancy is not made before operation. Among those patients with malignant tumors of the thyroid who were operated on and are still living, the presence of a malignant growth was not suspected in 84 per cent of the cases.

28.3 per cent of all the patients having malignant tumors of the thyroid gland, treated or untreated, are living more than one year, and 14.4 per cent more than three years since they first came under observation. Among those who were treated, 37.6 per cent are living more than one year, 18.8 per cent more than three years, and 12.8 per cent more than five years since treatment was instituted.

The best results have been secured by operation followed by irradiation. In the group in which this plan of treatment has been followed, 22.6 per cent of the patients are living five years or more since treatment was instituted, 36.8 per cent are living more than three years after treatment. Apparently many malignant growths of the thyroid are susceptible to irradiation because of their fetal and embryonic origin and because metastasis must take place through small blood vessels or lymphatics which are also comparatively susceptible to irradiation.

INTRATHORACIC GOITER

During recent years, only slight attention has been paid to the subject of intrathoracic goiter. Intrathoracic goiters may be classified as follows: goiters which are completely or incompletely thoracic, and goiters which are substernal or subclavicular.

Intrathoracic goiter is usually found in adults, except in the congenital type of case, in which aberrant tissue has descended into the thorax.

Von Eiselberg found a substernal projection of one or of two lobes in 50 per cent of his cases, partially intrathoracic goiter in five per cent, and a totally intrathoracic goiter in one per cent. In our series, from one to two per cent of all cases of goiter may be classified as completely intrathoracic, and 10 per cent as incompletely intrathoracic.

Two factors enter into the etiology of intrathoracic goiter: (1) the anatomic arrangement of the muscles of the throat, that is, the parathyroid muscles, the scaleni, and the sternocleido-mastoid muscle, and (2) deglutition.

The symptoms are both subjective and objective. The most striking subjective symptoms are dyspnea associated with inspiratory stridor which occurred in 66 per cent of our cases; choking, in 30 per cent; dysphagia in 24 per cent; hoarseness and change of voice in 25 per cent; stridulous breathing in 70 per cent; headache in 57 per cent.

In making a differential diagnosis, mediastinal tumor, aneurysm, Hodgkin's disease, and asthma must be considered.

OPERATIVE TECHNIC IN CASES OF INTRATHORACIC GOITER

After an adequate exposure has been secured—in some cases a transverse division of the prethyroid muscles is necessary—the upper pole of the gland is freed from the trachea in order to facilitate mobilization of the goiter, and the superior thyroid vessels are clamped and ligated. The thyroid is then freed downward from the trachea, care being taken to point the hemostats outward in order to avoid injury to the recurrent nerves. Dissection is continued until the entire upper pole is mobilized. The bleeding points are then ligated before an attempt is made to deliver the intrathoracic portion of the goiter. In this way the field is kept clean, and, should an emergency arise, there would be no obstruction by hemostats.

After the cervical portion of the gland has been completely mobilized, the finger can be passed down about the tumor, care being taken to avoid getting outside its fibrous capsule, and the tumor can be delivered into the neck. It is surprising how mobile the goiter becomes after the upper pole of the gland is freed from the trachea. It must be remembered always that the tumor is in close proximity to important

structures, and that the greatest caution must be used in delivering it.

The lower pole is then ligated. Ordinarily, arterial circulation enters the lower pole of the thyroid through the inferior thyroid artery, which communicates with the gland halfway between the poles and remains in the same location regardless of the position occupied by the goiter. After adequate hemostasis has been secured, a tape should be placed in the cavity

to prevent rupture of the pleura, or oozing into the mediastinum, and the incision is held open with acriflavine gauze. The tape should be removed at the end of twenty-four hours. A catheter can then be placed in the cavity in order to remove the serum by aspiration; the muscles can be reapproximated and the incision can be closed with clips, thus allowing the catheter to emerge through the center of the incision.

ORTHOPEDIC CLINIC*

BY ARTHUR STEINDLER, M.D.

IOWA CITY, IOWA

When I speak of an orthopedic clinic, I mean one adapted to the needs of the general practitioner. When you come to analyze the features offered in such a clinic, you soon find that the manner of demonstrating certain points represented in the clinic material varies in no way from the technic of demonstration adapted for specialists or for physicians particularly interested in this work. So, I shall try, accordingly, to bring out a few features in a plain, concise way, always keeping in mind that the practical points count first, and that theoretical considerations must give way to more urgent needs.

If you will permit me, I am going to start with a few cases in which the deformity or disability is more or less of a local character, and shall then proceed gradually to others in which it develops upon a systemic background.

1. The first patient complains merely of disability of the elbow joint on certain motions and in certain positions. For instance, she cannot play tennis or basket ball, and she cannot lift heavily without having pain in the region of the right elbow.

The history sheet shows that ten years ago she had sustained an injury to the elbow, but that injury was evidently not permanent and the effects of the injury soon wore off. It is only lately that she has been complaining of disability.

When you look at the elbow joint you do not see anything, at first glance, except that probably on the surface the head of the radius appears more prominent. You can put the elbow fully through the ranges of motion: flexion, extension, pro- and supination. You examine again and determine particularly the limits of

the physiological ranges. She winces as you produce forced extension, and also as you produce forced flexion. Therefore, there is nothing very seriously wrong with the play of the joint; but some disturbing element comes into play when the limits of the normal range of motion are reached. That is one point—the joint is free, except for its limital ranges.

The second point is that she can use her fingers. She can play the piano, can throw a ball, can swing a hammer, and she can squeeze my hand. She has control of all ordinary movements; but, again when it comes to certain movements which require a considerable display of strength, she complains of pain. Therefore, something must be wrong, not so much with the mobilizing apparatus of the joint, but rather with the provisions for stabilization; something obtains in this case which makes the elbow joint less firm and less stable for certain definite movements.

We shall see if we cannot possibly coordinate the two facts, first, that the limit ranges of those motions are painful, and second, that the extremes of motor effort, for instance, strong contractions of the fingers, are painful, with the third fact, namely, that the history mentions an injury many years ago.

A glance at the head of the radius and examination of the X-ray picture shows a dislocation of the head of the radius. This occurred many years ago and was due to a fall out of a swing. On that occasion the ligamentum annulare of the radius was evidently ruptured and the radius became subluxated. But gross disturbances of the function did not appear until now, when she came to the doctor for advice. For a number of years this patient has been able to get along with a dislocated head

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of the radius; and only now, at seventeen, she complains of moderate functional disturbances. Question: Can this dislocation be reduced?

It is not likely that a reduction of the head of the radius is now possible, as you can see the head has grown past the eminentia capitata of the humerus. I should prefer advising this patient to avoid strain of the elbow joint and to restrict the use of the hand so far as compatible with ordinary work, rather than advise an operation. In this way she should be able to save her elbow for ordinary work indefinitely, providing she does not subject it to excessive strain. If we were dealing with a laborer, the situation would be different; I should advise operation. In this case, however, I feel justified in advising conservatively, and I feel in the face of these minimum complaints that it is just as right to advise against operative procedure as it would be to advise operative procedure in the case of the laborer.

2. The next case is also one of local disability. It is a coal-oil burn which, for some reason or other, has spread over a considerable area. The scar tissue extends from the fingers to the shoulders on both sides. As you can see, the function of the fingers is excellent and she comes merely because of inability to extend the elbow, which is held in flexion by the scar.

The question arises what can now be done to remove the effects of this scar which has the shape of a web? Such webs, unless very thick and short, offer a good possibility for a skin plasty, especially if, as in this case, the burn does not go below the subcutaneous tissue. The muscle action is not impaired as there is no deep scar, and the contracture has existed for only a half year. In such cases we make a longitudinal incision here over the crest of the web, and two more or less oblique and to each other parallel incisions at the lower end of the longitudinal incision. As the flaps are dissected out you will see that you can overlap them, one to the right and one to the left of the median line, and the contour of the elbow will be restored, allowing in this case, a considerable extension, perhaps 25 to 30 degrees.

3. Cases of infantile paralysis are next demonstrated with emphasis upon the disalignments of the body as a whole. You must not allow your attention to be monopolized by a single part. It is a common mistake to allow your attention to be absorbed by the portion of the body which is most severely afflicted.

In this case the paralysis has been in existence for a number of years, and the time of spon-

aneous recovery of muscle power is past. Now we are dealing with a condition of general disalignment which reaches from the head to the foot, as well as with localized changes in the left leg and ankle, which are the parts primarily affected. You notice the general alignment of the body is faulty. The patient has an extension brace for the afflicted lower extremity, but it is too short, and, as she stands up, the pelvis remains tilted because the extension of the leg is not sufficient to make up for the shortening, which amounts to three and one-half, or four inches.

The paralysis occurred when she was five and one-half months old. All cases afflicted during the first twelve months show a very considerable amount of shortening. Here, it will be necessary to level the pelvis first, either by an extension or by other means. We usually do it by giving the foot an extension which will equalize the pelvis, leaving no more than a half or three-quarters of an inch to be made up by the tilt of the pelvis. In this case, however, the extension still leaves a great deal more than a half or three-quarters of an inch shortening. I think there is still an inch and a half left, and in a child this amount may influence the development of the spine and, moreover, open the possibility of developing a scoliosis. These scolioses are, at first, static and movable. The periodical pelvic sway in walking keeps them limber. In the course of time, however, when the tilt of the pelvis is too considerable, these static scolioses become structural and rigid.

How is the equalization of the legs to be managed?

In this case it is being done by an extension brace. It can, under suitable circumstances, be managed by operation. The operative lengthening of the leg is a legitimate and rational procedure, provided the conditions for it are favorable and you are reasonable in your expectations. It goes without saying that operative lengthening of the leg should not be performed until the children have reached a certain age—thirteen or fourteen years. It is a difficult operation and one that requires a great deal of hospitalization. The lengthening which can be obtained may amount to two inches and even three inches. The operation is to rid the patient of an extension brace, therefore, a good functioning knee is a desirable condition.

We now look at the ankle—you notice that it is completely flail. She has pretty good control of her knee, and has sufficient control of her hip, but she has no control of her ankle. This flail

ankle, of course, can be thoroughly stiffened, it is merely a matter of operative technic. You may also point the ankle and foot, in equinus position, that is, give it about an inch or one and a half inches drop and still have a stable ankle. But the patient will never walk well without the brace even though the ankle is stiffened, because there still remains a two inch shortening; and she will, in walking, come down on the stiffened ankle with enough force to make it advisable or necessary for her to wear a supporting apparatus. She has a brace now which is heavy and displaces the center of gravity very much more distally than it should be. This means that for this limb the swinging time is longer, the rotary momentum is greater than on the other side. Dynamically then, there is as great an asymmetry between the body halves as there is statically. So then, if in this instance, an operation is performed, which will enable her either to wear a more adequate brace from the dynamic viewpoint, or which will allow her to get along without one, both static and dynamic requirements will be served.

You have observed people who wear artificial limbs. It is most important that the artificial limb should have its weight distributed uniformly and not have most of its weight concentrated at the lower end. In other words, then, for the sake of uniform distribution of body weight, the stiffening of this ankle and the application of a more appropriate brace in this case is advisable.

4. The next case which I am demonstrating brings out the point that the value of a stiffening operation does not always consist in relieving the patient of the brace.

Here is a boy who had infantile paralysis a number of years ago, and it left him with a paralysis very similar in extent to the former case. The shortening amounts to two and one-half inches; his knee is unstable and he has to place his hand in front of the knee in order to push it back so that it will not jack-knife under him when he puts the weight of his body on this limb. He has an ordinary caliper brace with no joint, and the boy does not like the brace. We will have to give him one that he will like. He is of an age to demand a support which will allow him to flex his knee whenever he wants to sit down. A brace which is jointed in the knee, and has no further provision against jack-knifing is, therefore, insufficient.

The solution in this case lies in the so-called automatic lock, which locks the brace as he stands up and makes him walk with a stiff leg,

and which by a simple contrivance can be released so as to allow flexion in the knee joint when he sits down.

The patient has a two and one-half inch shortening, much less than the other, considering his height, and if you will examine his back you will find there is a certain static scoliosis in standing, but no curvature when he sits down. This shows how easy and simple it is to balance the body as a whole. As he stands his pelvis is tilted considerably, it slopes down to the right. You can imagine that if he had a brace with an extension of an inch and a half underneath, his pelvis would be pretty well balanced.

There remains now the question of whether or not his unstable ankle joint should be stiffened. We note that the joint, though flail, does not become deformed as he puts weight on it. Up to now, the patient has used crutches and has borne little weight on his afflicted ankle. Under the circumstances, I believe it is sound judgment to withhold for the time surgical inference, and to see how far he can go with the use of braces alone. Only when the joints are so deformed that the application of the brace itself becomes impossible, stiffening operation would be necessary. This is not the case in this instance. So we are going to supply him with a long leg brace and let him walk. The extremity has not been bearing weight in the last years and the bones have not grown sufficiently strong. Operative procedures are not quite as promising, everything being equal, as they would be in a leg which has been functioning as a weight-bearing instrument. Therefore, the first indication should be the application of an appropriate supporting apparatus which he should wear until a definite operative indication can be made, if such indication should be necessary in the future.

You will ask, is it necessary for him to wear a brace all his life? Is it feasible to make him independent of the brace by operative procedures? Obviously any operations which will procure stiffness both for the knee and for the ankle will accomplish what the braces accomplish, and many surgeons follow this line of reasoning.

I believe before one resorts to the stiffening of the knee joint in young people or adolescents, the problem should be placed before the patient, and the patient should first have full opportunity to try out the advantages of a brace with an automatic knee joint. Some of the patients will adjust themselves, others will not be happy with a brace under any circumstances. I have performed

a good many fusion operations of the knee, but never until the matter had been placed before the patient, and until the patient is old enough to appreciate the advantages and the disadvantages of the operative stiffening of the knee joint.

5. This next case is an instance of a disability of quite a different nature. This young lady has arthritic deformities involving a number of joints of her body, the condition existing for thirteen years. It has, among others, produced the characteristic deformity of the hand consisting of carpo-metacarpal flexion with midphalangeal hyperextension contractures, as you can see. That is a very characteristic deformity of the arthritic hand. First, let me emphasize that there is no necessity for letting these deformities occur. They are preventable to a large extent and can be avoided by proper splinting, as can be those of the lower extremities. The tendency of flexion contracture in the metacarpophalangeal, and extension contracture in midphalangeal joints, expresses the involvement of the intrinsic muscles of the hand. Occasionally we had to resort to a resection of that branch of the ulnar nerve which supplies these muscles. This, of course, is done only when it is impossible to keep the fingers in proper balance by splints. You will notice that the deformity of the feet is entirely different. Here you note a protrusion of the ball of the foot, due to a retraction of the toes, that is, hyperextension of the metatarsophalangeal and flexion in the midphalangeal joints. These are called claw toes. If you will look at this X-ray picture, you will see that the metatarsophalangeal joints have become entirely dislocated. The basal phalanges have left the heads of the metatarsals and the metatarsal heads are digging down into the ball of the foot, whereas the bases of the phalanges are riding dorsally upon the shafts of the metatarsals. Naturally, a forcible correction here is no longer of any avail. One cannot get the bases of the phalanges over the metatarsal heads. The only thing one can do is to resect the protruding metatarsal heads. Some surgeons advise resection of the bases of the phalanges instead. Having tried both procedures we did not find that the latter has any advantage over the resection of the metatarsal heads. Of course, after having all the heads resected, one does not have a very strong weight-bearing ball of the foot, but it is entirely serviceable if supplied with a mechanical support. With this the weight is carried on the instep, or the longitudinal arch, and the patient will be able to

walk. Now, as it is, she can only walk on her heels and cannot sustain weight pressure on the ball of the foot.

When a support of any kind is applied to deflect the body weight upon another portion of the foot, the obvious mechanical requirement is a stable basis on which the plate supporting the foot must rest. This prerequisite, simple as it is, is often neglected.

One might find almost everything placed in these shoes as supports: the steel insole, the leather insole, and the pieces of leather to slip into pockets; all solid and reliable with the exception that the sole of the shoe, thin and flimsy, bends like paper. There can be no real supportive property in a construction of this kind. The first prerequisite is a solid, stiff shank in the shoe. This shoe (demonstrating) has a fairly good shank, it possibly has a piece of steel built in it, but even that is going to break down in time and it would be wise to reinforce it with a solid strip of steel fastened to the sole. I should advise that this be done, especially since the patient is a young woman who expects to lead an active life. The deformities of her hands and fingers which are threatening to progress must be overcome by proper splinting. The splints must extend down past the metacarpophalangeal articulations giving the joint a position converse to that produced by the deformity.

We are now turning our attention to the remote effects of the deformities upon neighboring joints. A foot deformed as this one can not be without influence upon the knee joint. We find, indeed, the knee joints enlarged, but this is due simply to hypertrophies of the normal fat accumulations in the ligamenta mucosa or ligamenta alaria. If one wants to know whether there is any transmission of strain upon the knee from any distorted foot, as one might naturally expect, one must examine the internal lateral ligament of the knee for signs of strain and stress. So the indications in this case would be the operative correction of the deformity of the feet, consisting of the bunion operation, and the resection of the metatarsal heads; the splinting of the deformed hands and fingers, supported by massage, in order to re-establish the muscle balance of the hand and fingers, and in muscle educational drill and exercises, as the contractures are being overcome.

6. The next patient is five years old and complains of difficulty in walking. He was a full term child, but did not walk until the age of two and one-half years. When he did walk, he did

so on his toes with the heels drawn up. His speech faculties are retarded. The retardation in walking should be analyzed to find whether it is due to constitutional symptoms of a metabolic nature, such as rickets, or, whether primarily due to lack of normal muscle control from central or peripheral nervous causes.

As the boy lies still, his ankles are in normal position, but as he walks, he is forced on his toes; evidently his mechanism of innervation is such as to overthrow the normal balance in favor of the plantar flexors of the ankle. In other words, he has a contraction of the calf muscles to which the normal tone of the dorsiflexors of the foot is not holding balance. We also note that his knees are close together, due to overbalancing of the adductors of the thigh over the abductors. In other words, he has developed a certain compulsory innervational attitude due to faulty muscle balance.

It is a case of spastic paralysis, of the congenital type. The usual diagnosis is simply spastic paralysis and one lets it go at that. Spastic paralysis is a rather complex thing and spasticity is a collective name for all kinds of upper motor neuron lesions. Human locomotion is a very complicated affair and is influenced and modified by many motor centers beginning with the brain cortex and ending with the anterior horn cells and peripheral nerves; between these extremes there are at least three intermediate centers, each one adding a certain color to what we recognize as the picture of normal locomotion.

In analyzing the character of spasticity certain important features must be emphasized. The first thing to determine is whether the spasticity is prevalingly contractural, or whether it is prevalingly innervational. What do I mean by that? It may be that in one case the contraction is such that it cannot be released, even at rest, in other words, there is a hypertonus of the muscles which at no time can be relaxed. In another case, the muscles are fairly relaxed at rest but as motion is intended or instituted, his volitional muscles contracture is carried out shock-like and with an explosive force which greatly oversteps the ordinary dynamic requirement—this is innervational spasticity. In the first place there is over abundance of the plastic tone of the muscle. In the other instance there is an excess of voluntary contracture. Each of these cases most likely has a different origin in the brain and each has to be considered and managed from a different point of view.

We are now turning to our spastic patient.

We expect the reflexes to be exaggerated, but they are only moderately increased. As I am moving the leg I do not seem to find any resistance, but when I stand the patient up on his feet there is a good deal of contracture of the tendo Achillis. This boy has no increase in the plastic tone, but he has an increase in the innervational spasticity. This is important for the choice of operative treatment. As you know some of the newer operative procedures deal with the influence of the sympathetic nervous system upon locomotion, that is, the sympathetic Ramisection. This case, I believe, is not suited to this procedure for the reasons mentioned.

Another feature of this patient's disability is, that the knees bend, rotate inward, and the hips try to go into adduction and flexion. According to the history all these deficiencies have improved in time, including the contracture of the heel cord. He is much better than when he first started to walk. Evidently he has learned in the course of years to master to some extent his difficulty of innervation. It would have been much more difficult to master his locomotor deficiencies in the presence of excessive plastic tone. This spontaneous improvement, limited as it is, gives us a very important clue for the future management of the case. The treatment of spastic paralysis is, in the last analysis, educational. Whatever other means of treatment are employed, whatever operations are performed, whether on tendons, nerves, or stiffening operations on the joints, or operations on the posterior roots, or the sympathetic nervous system, they are only episodes in the treatment. The background of the after-treatment is muscle drill and muscle education; and unless this educational policy is carried out for months and years, your operative endeavors will result in failure; not because they are not indicated, but because in themselves they are inadequate to produce results. Muscle education is an absolute necessity, and without it no lasting results are going to be obtained.

The question was raised whether this case is one where an operation upon the sympathetic nervous system should be undertaken preparatory to subsequent educational treatment. I do not think so, because the patient shows no signs of hyperplastic tone, of which the most usual sign is the so-called clonus reflex. When the knee reflexes are elicited the leg fails to go back promptly into the flexed position; it does so hesitatingly and haltingly, "in steps." It is described as a shortening and lengthening reaction. The limb accommodates itself always to the po-

sition at the moment, due to the excess of the plastic tone. On the other hand, the case is peculiarly fitted for conservative muscle educational treatment. Although he has already learned a good deal by himself, it would be very valuable to institute now an educational program consisting in the systematic teaching of directed motion. Let me say a few words about the topic because it is so important and has so much bearing upon the prospects of spastic paralysis, and will, therefore, I think, be of much interest to the general practitioner.

I have said that human motion is a complex thing. Evidently there exists some primordial motion in the chain of phylogenetic development. The purposeful directed motion, which is our mode of locomotion and action, has been acquired comparatively late. If you will look at the baby, you will see that his motions are flying, jerky, uncontrolled. They are primordial motions, such as the motions of the fish in the water. If a patient with an innervational defect in his locomotive function is going to take up the study of normal locomotion, it is for him a real problem, and he has to start from the beginning, that is, start with the primordial motion.

We place these patients in water for no other reason than to eliminate the factor of gravity. Gravity has an influence on the reflex action of the muscle and makes the innervation scheme of the muscle much more complicated; consequently you can carry out those primitive motions very much better in water.

Then we proceed to analyze ordinary movements into their components. We teach these children first the simpler and cardinal types of motion, and then promote them gradually from one type to the other, until finally they are able to do complicated and directed motions and coördinations. In other words, there is no use of forcing a child engaged in the study of the principle of locomotion, so natural for the ordinary being, to do complex tasks from the beginning; for instance, to try to make it thread a needle or something like that. That would not be good education under any circumstances, and it certainly is not good educational policy in the problem of the development of locomotive ability.

7. The next case to be demonstrated is more common and more simple. It is an ordinary case of knock-knees. Sometimes mothers bring the child because he is knock-kneed, or because he has knock-ankles, when, in fact, he has not only knock-knees and knock-ankles, but also other associated deformities, all having the same back-

ground.

I will take this occasion to speak of the technic of examination. It should be one of the whole body. Sometimes the mothers are indignant if the child has to be undressed, insisting that there is nothing else wrong, but there is no such a thing as a knock-ankle deformity that does not leave some imprint upon the rest of the body. It is merely an expression of some systemic condition.

This child began to walk when fifteen months old. Very shortly afterwards the mother noticed this condition of knock-knees, which seems to be on the increase. He is not standing on his knees, however, he is standing on his ankles. When you turn him around you will notice that he has knock-ankles also, and that the knock-ankle deformity transmits itself to the knee joint and produces knock-knees. Again you will notice that his stomach is protruding, because there is some weakness of the abdominal muscles. He is constipated. His chest is slanting. You can see there is a disalignment of the whole figure. He has a flat chest and a protruding abdomen, hyperextended hips, static knock-knee deformity and static knock-ankles. There is associated with these disalignments a weakness of the entire musculature of thorax, trunk and extremities in spite of the fact that the boy looks well and seems well developed. He is three years old now and to all appearances is a very well developed child, nevertheless, he is below par. He is not up to normal body weight; sufficient evidence why these children should always be examined by the general practitioner as well as by the specialist, and they should be fully undressed when they are examined.

It is stated that this child is constipated. This is partly due to insufficient tone of the abdominal muscles. The boy evidently needs developing of the chest and abdominal muscles as much as anything else. He is to be given supports for his ankles, massage and exercises for the extremities as well as corrective respiratory and abdominal muscle exercises.

8. The last case likewise shows local deformities developed upon a general systemic background.

Here is a little boy, three years old. The complaint is slowness of development. He is a microcephalus. The microcephalus does not have a small brain just because the head is small, on the contrary, the head rather adapts itself to the brain. He has an epicanthus; he does not have a high palate, but he has a very rough, thick skin, which points to thyroid deficiency.

These are the most conspicuous signs: small head, the epicanthus, the Mongolian type, the thick skin. Evidently there is a very considerable developmental defect upon the endocrine basis, particularly of the thyroid. Let us see what effect it has upon his locomotion. He has been walking for almost a year, being now three years old. He waddles. We will examine his hips to see what is the matter. The femoral heads are displaced upward. He has congenitally dislocated hips. But it would be wrong to

treat him for just a congenital dislocation of the hips, because he has other congenital defects, all arising probably from one common cause. This constitutional cause reaches probably back into early uterine life. Congenital dislocation of the hip is a condition for which the "ground is laid" in the third month of the uterine life. So, at least that early, if not earlier, we must date back the incipency of the pathological condition which has led to this retardation in the development.

CLINICAL PATHOLOGICAL CONFERENCE*

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MINNEAPOLIS, MINNESOTA

Autopsy—29—1730.

Woman, 54, admitted to hospital, November 26, 1929, to the contagious service. She complained of hoarseness, inability to speak above a whisper, inability to swallow without difficulty, spasmodic cough, and sore throat of about one week duration. The symptoms from the onset had progressed gradually until at the time of admission she was able to speak only in a barely audible voice. She could not swallow even water without great difficulty, and attempts to swallow were followed by spasmodic coughing. She had been under the care of a physician at her home since shortly after the onset of the disease, and two throat cultures had been negative for diphtheria.

Her throat on admission was found to be acutely inflamed and was covered with patchy confluent exudate which was present on the anterior pillars of the tonsils and the soft palate. The submaxillary glands were moderately swollen and tender. In view of the patient's age, the fact that throat cultures were negative, and the clinical course during the week, the case was considered as more likely to be Vincent's angina or streptococcal sore throat, and diphtheria antitoxin was felt not to be indicated. Her temperature on admission was 101°. It never rose above that during her stay in the hospital. The private physician reported that her temperature had not been elevated above 100° to 101° while under his care, and her pulse both before admission

and after admission ranged between 95 and 110. Nose and throat cultures made in the hospital were negative for diphtheria.

The patient was considerably dehydrated, due to her inability to drink. Therefore by hypodermoclysis and rectum fluids were given. The day after admission her throat seemed not as sore as previously, but she still spoke in a whisper. On the third day of admission the patient suddenly developed severe dyspnea and marked cyanosis following a coughing spell. Laryngoscopic and aspiration were done, and membrane was seen on the epiglottis. In about one and a half hours another laryngoscopic examination was made and pieces of membrane were removed from the glottis which was found to be very edematous. It was thought at this time that the membrane was characteristically diphtheritic. Because of the extreme respiratory difficulty, tracheotomy was done. At that time the patient was very cyanotic and Cheyne-Stokes breathing had been present for several minutes. Some relief was obtained by the tracheotomy, but she became unconscious, her extremities cold and her fingers cyanotic. She died about five hours after the operation.

Postmortem report. Acute pseudomembranous inflammation of the larynx, trachea, and bronchi; large casts composed of false membrane filling the larger bronchi. No inflammation in the pharynx. Heart, 260 grams; soft friable myocardium; no dilation of the organ. Healed duodenal ulcer. Cloudy swelling of the kidneys. Cultures from the larynx, obtained at postmortem, positive for diphtheria. Terminal bronchopneumonia.

Diagnosis: Laryngotracheal diphtheria.

Comment: The negative cultures in this case misled the clinicians. It occasionally happens in laryngeal diphtheria that cultures from the pharynx are negative.

Autopsy—24—323.

Man, 23, admitted April 21, 1924, with the following complaints: swelling of face and eyelids (2½ weeks); frequent headaches (1 month); dizzy spells with vomiting (1 month); occasional epistaxis (2 weeks); aching pain in back (1 month);

*The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the post-mortem report.

spells of polydipsia and polyuria (6 years); constipation (1 month).

He was susceptible to sore throat as a child. Typhoid fever 6 years ago; passed large amounts of blood in the urine at this time; was told he had Bright's disease; Neisserian infection 8 months ago. He believed that his trouble began about 1 month ago with a cold, followed by the symptoms mentioned above. However, he had had spells of polydipsia and polyuria and constipation since the attack of typhoid fever. The headaches were relieved by purgatives. Vision was blurred.

Examination showed edema of the eyelids; very slight edema of the legs. Heart: apex outside left nipple line; enlargement of hypertension type; systolic murmur at apex transmitted to axilla. Blood pressure 198/130. Eyegrounds showed papilledema of both discs; no arteriosclerosis. Lungs negative until the day before death when large moist râles were heard in the lower lobe of the right lung. Other organs negative.

Patient was irrational most of the time. Breath had a urmic odor. Death on the 12th day in the hospital.

Urine: 95 to 300 c.c. daily the last four days, 2300 c.c. on the 5th hospital day. Specific gravity 1009 to 1020; albumin ++; many casts and erythrocytes; sugar and acetone negative.

Blood: hemoglobin 70%; red blood cells 2,770,000; white cells 17,300; 82% polymorphonuclears. Creatinin 7.5 to 14 mg; urea nitrogen 115 to 199 mg.; blood sugar .20 per cent. Volhard test: 27% in 4 hours; specific gravity 1010 to 1012.

Postmortem report. No fluid in the serous cavities. Heart 425 grams; left ventricular hypertrophy. Edema of lungs with bronchopneumonia of the right lower lobe. Right kidney absent. Left kidney weighs 125 grams; coarsely granular surfaces; on section the cortex is thin, and small yellow spots are visible.

Microscopic sections show advanced chronic glomerulonephritis.

Diagnosis: Chronic glomerulonephritis.

Comment: The history indicates that the nephritis began six years before, following the typhoid fever. The manner of onset and the absence of arteriosclerosis of the retinal vessels indicate clinically glomerulonephritis rather than primary hypertension with uremia.

Autopsy—29—1893.

Woman, 69, first seen November 8, 1927, when she complained of urinary symptoms. Diagnosis was chronic constipation, acute cystitis, and dental infections. Blood pressure 140/78. The urine showed specific gravity 1006 to 1022 with some pus cells and a few red cells. Culture showed gram positive cocci in the urine.

In the summer of 1928 she was in charge of some children who had pertussis. She had a slight cough which was thought to be pertussis. During the fall of 1929 she had trouble with her gums and teeth and did not feel well. About Thanksgiving nine teeth were extracted on the same day. She did not feel well after this but went on with her usual work. On December 23 members of the family noticed that she did not look well; her skin had a pale, dusky appearance. On the 24th she ate a large evening

meal and during the night developed cramps and vomiting with chilly sensations. This was thought at first to be food poisoning. She had a watery diarrhea the next day. A physician was called on the 26th at which time diarrhea was present, but vomiting had stopped. There was some abdominal distension. Temperature 103+°. Aches throughout the body.

Examination of the left chest showed numerous râles at the base and in the interscapular region; no petechiae; reflexes negative; no paralysis. December 27 the patient was delirious and could not see. Temperature 104.6°. She was taken to the hospital at this time. December 28, 7:00 A. M., she was in coma.

No neurologic findings. At noon this day she had a hemiplegia. Babinski was positive on both sides. December 29 she was in deep coma. Lungs: increased scattered râles especially on the left side. Spinal puncture: 40 cells; Nonne positive; fluid clear; no increase of pressure.

December 28, 200 colonies of organisms to 1 c.c. of blood; thought to be streptococcus viridans but not completely worked out. December 29 there were a few petechiae on the back. The spleen was not palpable because of distension. Involuntary urination. Leucocytes 8,000; 80 per cent immature polymorphonuclears. The urine showed a cloud of albumin; occasional red cells, and pus cells. X-ray flat plate showed heavy hilum shadows. Scattered over the lung fields were very small thickened areas suggesting congestion. The signs of pneumonia did not progress. The heart showed no murmurs. Blood pressure was normal. Death was believed to be due to a cerebral lesion. The eyegrounds showed great congestion of the veins on the right side as compared with the left.

Some years ago one ovary and the appendix were removed. Seven years later the patient was operated on for peritoneal adhesions. The only other known disease was a probable malaria.

Postmortem report: No edema; no jaundice; a few faint petechiae on the skin of the trunk and extremities. Old pleuritic adhesions on the posterior border of the right lung. Heart, 300 grams; no enlargement of any of the chambers; the mitral valve shows three small vegetations. No disease of any of the other valves; no coronary disease. Terminal hypostatic bronchopneumonia of only limited extent. Calcified Ghon tubercle at the apex and another at the posterior border of the lower lobe of the right lung. Calcified bronchial lymph nodes on the right. The spleen weighs 290 grams. Acute splenitis. The liver weighs 1900 grams; cloudy swelling but no passive congestion. Cloudy swelling of the kidneys. Multiple embolic abscesses and areas of encephalomalacia through the cortex of the right cerebral hemisphere.

Diagnosis: Acute bacterial endocarditis with embolic abscesses in the brain.

Comment: The bacteriemia probably followed multiple extraction of infected teeth. Endocarditis resulted from the bacteriemia. The embolic abscesses in the brain were caused by detached pieces of thrombus from the mitral valve.

Autopsy—29—1565.

Woman, 64, entered hospital November 2, 1928,

and was discharged March 20, 1929. At that time she gave a history of having had attacks of precordial pain for the previous two weeks, which was of a dull aching nature, gripping in character, and associated with nausea. She had been having these attacks for two years, five or six times a year. She had noticed palpitation for one year.

She was found to be a large, obese woman. There was no edema of the extremities. Blood pressure was 150/90 and remained so throughout her stay. The liver was felt about 3 cm. below the costal margin and was tender. There were moist râles at both bases. The pulse was totally irregular. X-ray showed total transverse width of the heart 17 cm. Enlargement was mostly in the region of the left ventricle. There was effusion at the right base and also a small amount at the left base. Basal metabolism rate was normal. Blood picture was normal. Urine showed albumin +. Electrocardiogram showed auricular fibrillation, left preponderance, and a negative T-1. A subsequent electrocardiogram showed low voltage and a negative T in all leads. The patient left the hospital with diagnoses of coronary sclerosis, hypertension, and auricular fibrillation.

She re-entered the hospital August 2, 1929, and was discharged August 31. The dyspnea had progressed. She stated that her legs for the first time became swollen and had been during the month previous to this admission. Her abdomen was larger than usual. There was pain in the upper right quadrant constantly. There were no other symptoms recorded, outside of the progressive shortness of breath and the edema. No mention was made of precordial distress.

Examination revealed râles over both bases. The heart was very rapid and fibrillating; the heart tones were of fair quality. There were no murmurs. Blood pressure was 150/114. The liver was markedly enlarged and very tender. The abdomen was distended. There was a small amount of ascites. There was pitting edema of both legs. The heart outline could not be made out because of effusion in the chest, most of the enlargement being toward the left, and was reported as being of the hypertension type. The pulmonary tree showed considerable congestion with thickening of the interlobar pleura.

The urine showed a trace of albumin. The blood picture was normal. Blood urea nitrogen was negative. Electrocardiogram showed left ventricular preponderance, rapid fibrillation with a rate of 180, T-1 was positive, T-2 iso-electric, and low voltage. The patient was discharged with a diagnosis of hypertension, auricular fibrillation, and cardiac decompensation. During the stay her pulse dropped to 90; edema of the legs had cleared up considerably; the liver receded; and she was much improved. Blood pressure was 170/100 with a rate of 90. Blood pressure ranged from the foregoing to 140/75.

She entered the hospital the third time on October 19, 1929, and died on November 3. The only history given was symptoms of marked decompensation coming on since the last discharge. The pulse was 160. Blood pressure 130/95. There was a slight amount of swelling of the face and eyelids. There were moist râles on both sides. There was decreased resonance of the bases posteriorly. The heart was enlarged to the left axillary line and 6

cm. to the right on percussion. There was a systolic murmur at the apex. There was pitting edema, extending up to the thorax. The abdomen was distended. The liver was down 10 cm. Measurements of the heart could not be ascertained because of the pleural effusion on both sides, especially on the left. The heart was pushed to the right to a rather marked degree. There was congestion of both lungs. The blood was negative. Urine showed a trace of albumin. Blood chemistry was normal. Electrocardiogram showed a low voltage, left preponderance, and iso-electric T-s.

The patient did not seem to respond to cardiac medication, gradually became worse, and died with typical cardiac failure.

Postmortem report: Moderate edema of the legs; slight icterus; ascites (400 c.c. of clear fluid); hydrothorax, 400 c.c. of fluid in left chest; fresh fibrinous adhesions at the left base. The heart weighs 380 grams; moderate hypertrophy of the left ventricle; moderate dilation of the left auricle; no disease of any of the valves; no coronary disease; no disease of the myocardium. Edema and congestion of the lungs with a slight terminal bronchopneumonia. Marked chronic passive congestion of the spleen and liver. The walls of the gall-bladder are thickened and infiltrated and a number of calculi are present. No disease of the kidneys.

Diagnosis: Hypertension heart with myocardial exhaustion.

Comment: This is a very common cause of death in elderly people. The blood pressure was above the normal level until toward the end. The evidences of heart failure are edema, ascites, and passive congestion of the liver and spleen.

Autopsy—24—346.

A-24-346. Man, 59, a laborer. Father died of cancer; mother of asthma(?). No previous illness except a bowel disturbance of one day's duration 15 years ago. Wife living and well and one daughter 23 years old is well. In 1918, while working, sustained a compound T-fracture of the right arm. There was trouble with union and ankylosis of the right elbow resulted. An operation was performed for the ankylosis but osteomyelitis followed the operation which necessitated amputation at the middle third of the arm in 1919. There was difficulty in healing of the stump. An infection persisted which would result in the formation of abscesses from time to time. There was an increase of pain in the stump shortly before Christmas, 1923. About three weeks before death the remaining portion of the right humerus was disarticulated. At the time of the operation pus was found in the muscles. The stump did not heal completely but continued to discharge pus, sometimes profusely. The temperature during the last three weeks was never over 101.5°. During the last week he was said to have had no fever.

On May 13, 1924, at 4:00 A. M., the patient went to the bathroom because of diarrhea. He had considerable trouble in getting back into bed because of difficulty in walking. He had some nausea and vomiting that morning between 4:00 and 10:00 o'clock.

Examination at 10:00 A. M. showed pain and tingling in the legs, inability to walk, inability to

move legs and left arm. Pulse 130. He was weak and covered with cold perspiration. His legs were flaccid. Reflexes of arm and legs absent. At first he could move his head a little but there was complete flaccidity of the muscles of the neck. He could wrinkle his forehead and move his mouth. All eye movements were normal. Speech was at first thickened; later on patient was not able to speak. All sensory phenomena were normal. Patient was tested with hot water bag and pinprick as well as a piece of cotton.

At 6:00 p. m. there was great difficulty in breathing. Patient was conscious but could not speak. Used all accessory muscles in respiration; did not use abdominal muscles. At 6:30 p. m. cranial nerves

were found normal down to the 9th. There was difficulty in swallowing. Speech was entirely gone. Pulse 160 and irregular and thin. Extreme dyspnea. All skin sensations intact. Death, May 14, 12:25 A. M.

Postmortem report: Discharging sinus from stump of right arm. No other gross lesions. Microscopic examination of the brain and cord showed practically no lesions. Diagnosis: Landry's paralysis.

Comment: Cases of ascending motor paralysis without definite microscopic changes in the motor cells are commonly called Landry's paralysis. The nerve cells are injured, but visible degenerative changes do not appear in the short time that elapses between injury and death.

SHOE-DYE POISONING

By C. WM. FORSBERG, M.D.

SIoux FALLS, SOUTH DAKOTA

Inasmuch as there have been no articles on shoe-dye poisoning in *THE JOURNAL-LANCET* for some time at least, I prepared the following with the idea that we should be occasionally reminded of its presence:

The solvents of shoe dyes, aniline and nitrobenzene, are the causative agents in cases of poisoning. They are absorbed through the skin of the feet and form para-aminophenol which circulates in the plasma of the blood and in the tissues giving them a dark color which causes a peculiar dusky cyanosis.

Depending on the degree of absorption and toxicity we get two different pictures. Beyond a certain point the conducting mechanism of the heart is affected and we experience heart-block and accompanying cardiac arrhythmia¹. In these cases there is dyspnea, poor pulse and the usual signs of cardiac insufficiency and these cases are, of course, more likely to result fatally. When the absorption is insufficient to cause cardiac toxicity we get a rather bizarre picture which gives one the "shock reaction" of something unusual. Then we have a peculiar dusky cyanosis which is not accompanied by the usual dyspnea and discomfort. They are sent to a physician by their friends because of the cyanosis. The dyspnea is absent because there is no reduction in the oxygen carrying capacity of the blood, and the tissues are sufficiently supplied with oxygen. The cyanosis is not due to methemoglobin formation in the cases without cardiac toxicity². No aid is offered in the diagnosis by an inspection of the feet since it is not the dye that causes the poisoning, but its solvent, and there is usually no discoloration present. The history of wearing

freshly dyed shoes concludes the diagnosis. In the treatment of these cases oxygen is not a necessary part, only fluids and rest in bed being necessary. The kidneys bear watching since two cases of hematuria³ in recovered patients are recently recorded and we should therefore probably increase the period of convalescence.

The first case was reported in 1900. In 1925, Muehlberger gathered the data of 47 reported cases of shoe-dye poisoning and found that the European cases, numbering approximately half, were due to aniline poisoning, while the American cases were due to nitrobenzene. This included 17 cases which occurred in an army camp in which the soldiers had dyed the shoes brown. He added 10 of his own, including the first 6 cases of aniline poisoning reported in this country. He made a plea for the discovery and use of a non-poisonous dye solvent. Nitrobenzene is favored as a solvent because it costs about half as much as aniline, but has the disadvantage of having a disagreeable odor when applied.

There have been a number of cases reported since then, but they occur infrequently enough to warrant being occasionally reminded of them and to that end the following cases are reported:

CASE 1.—E. A., aged 7 years, who had become cyanotic rather suddenly during the morning, was referred by the family physician for a cardiac examination. He had never had cardiac symptoms or cyanosis before. The mentality was clear and he was able to walk into the office. He suffered no pain except for a slight headache. Physical examination of the heart and lungs was negative. The cardiac rate was 110 and the pulse full and otherwise normal. There was no dyspnea and no in-

crease in respiratory rate. There was a striking ashen cyanosis of the skin, sclerae and finger nails. He was not at all alarmed, quite in contrast to the parents. The history elicited the fact that the father, who was a shoe repairer, had dyed his son's shoes the evening before. The patient was sent to the hospital, fluids forced, and the cyanosis disappeared during the night. He left the hospital the next day feeling perfectly well, since the parents insisted on taking him home. There has been no recurrence during the past two and one half years and he is in good health. A chemical examination of the dye was not made since it has been well established that both aniline and nitrobenzene, the two common solvents, will produce this condition. This one had the disagreeable odor of nitrobenzene. The bottle had a caution label stating that the shoes should never be dyed on the feet and that the shoes should be allowed to stand at least 72 hours before wearing or until perfectly dry. This conformed to the requirements of the labeled product for some of the larger cities but this precaution had been disregarded. To an inquiry, the firm manufacturing

the product replied that they discontinued the use of aniline oil and mybrane oil (nitrobenzene) three years ago because they had a number of cases similar to the one mentioned. Since then they have been using ortho-toluidine and ortho-dichlorbenzene and have had no complaints on their dyes.

CASE 2.—This patient was an elderly man who complained of blue lips. He did not have any dyspnea and there was no signs of cardiac insufficiency. History elicited the fact that his wife dyed his shoes black every week and that he would wear them without drying. He was advised to let his shoes dry thoroughly before wearing them, but it has not been possible to follow up this case to see what results followed.

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PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of January 8, 1930

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, January 8, 1930. Dinner was served at 7:00 P. M., and the meeting was called to order at 8:00 P. M. by the Vice-President, Dr. J. S. Gilfillan, of St. Paul. There were 32 members present.

Minutes of the December meeting were read and approved.

The Secretary read a letter from Dr. Gustav Schwyzer, of Minneapolis, resigning as President of the Academy. A motion was carried that Dr. Schwyzer's resignation be accepted and the Academy proceed to ballot for another president. Dr. Emil Geist, Minneapolis, was unanimously elected president for the year 1930.

Dr. Arnold Schwyzer (St. Paul) reported the following case of endothelioma of the pleura removed by operation. Specimen was shown.

This morning we had an unusual operation on a young man, 23 years old, who had noticed a persistent pain in the right side of his chest for two years. X-rays made several times during the last year showed a tumor originally the size of a large plum gradually growing larger, apparently in the periphery of the lung. A bulging was noticed in November and biopsy showed endothelioma. First we resected a rib above and one below the bulging area, that is, about 12 cm. of the 6th and 8th ribs. It was done under moderate over-pressure. The tumor was adherent to the diaphragm. This area of the diaphragm was excised, and a tight closure of

the wound was made. This evening, 8 hours after the operation, the patient is reported doing well.

Neither Sauerbauch nor Lilienthal report an operation for endothelioma of the pleura in their books on surgery of the chest.

(Addendum: Recovery was very smooth. The patient was out of bed four days after the operation and left the hospital one week after operation, feeling well.) (Case to be published in full at later date.)

DISCUSSION

DR. E. T. BELL (Minneapolis): This is a most unusual tumor and we have never had anything like it in our experience in the laboratory. The biopsy shows it pretty clearly to be an endothelioma. It is a cystic circumscribed tumor attached to the pleura over the ribs. The operation was much simpler than had been anticipated. It is the only case on record. I think, of an endothelioma that has been operated upon successfully. I am inclined to think it will be cured because it does not seem to involve any surrounding tissues.

DR. J. S. GILFILLAN (St. Paul): About 25 years ago I had a case come to me with a tumor just over the heart. We did not have X-ray then and we did not have available any pressure apparatus. At first I thought that in order to prevent the collapse of the lung I might pass large needles with sutures and get at the lung and hold it, but I did not do that. I opened the chest and found the tumor had involved the left lung. I excised four ribs with the tumor and lifted the lobe of the lung out and excised about one-half of the lung. I rotated the remaining portion of the lung and sewed it around the opening and closed the opening. There was apparently no shock from the operation and the patient felt

fine the next day. That was an endothelioma; it was wider and flatter than Dr. Schwyzer's. About a year later I saw the patient, and at that time he had metastases in the vertebrae.

DR. HEBBERT JONES (Minneapolis): About two years ago I had a man come to see me complaining of pain in his right shoulder. I went over him for possible trouble in the cervical nerves, a lung condition, or aneurysm, and they seemed to be all negative. I could not make a diagnosis. He did not seem to be getting any results and left me and went to one of the Clinics and they X-rayed him and found a pleural effusion. They tapped him, and after that his pain was much worse. He then went to an osteopath and later came back to me, this last fall. He died October 30, 1929. When he returned to me he presented the appearance of a large tumor of the chest, but he was in such bad shape that I did not do anything but try and keep him comfortable. He had had one son die of Hodgkin's disease, and a daughter has tuberculosis. I will read parts of the pathological report from the University of Minnesota:

"The right diaphragm is very firm and rigid. The left pleural cavity contains 200 c.c. of straw-colored fluid. The right cavity is obliterated by firm white tumor tissue except for two pockets of straw-colored fluid of about 200 c.c. each, which are located posteriorly. The pericardial sac contains about 20 c.c. of slightly cloudy fluid. The right side of the sac is injected and roughened from extension of the tumor tissue. The right lung is firmly adherent to the chest wall, the diaphragm and the mediastinum by a firm white growth of tumor tissue up to 3.5 cm. in thickness. This growth has gone through the right diaphragm and is adherent to the liver. The nodes of the bronchi are normal to inspection.

"The spleen weighs 90 grams. The diaphragmatic surface of the spleen is firmly adherent to the diaphragm by a small firm white growth 3 cm. across. On section there are many small healed miliary tubercles.

"The liver weighs 1100 grams. It shows moderate evidence of chronic passive congestion and is firmly adherent to the diaphragm by firm white tumor tissue. The gall-bladder contains two small stones.

"Diagnosis: Endothelioma of the pleura with extension to liver, pericardium, lung, diaphragm and spleen."

I was absolutely unable to make a diagnosis in that case, and no opportunity for biopsy presented itself as in Dr. Schwyzer's case. Although I have had autopsies of a large per cent of my cases, I have never before had a case of endothelioma of the pleura and do not see how I could diagnose another.

DR. HILBING BERGLUND (Minneapolis): A moment's consideration of the diagnosis might be worth while. Could the diagnosis have been made a year ago? I believe not. A circumscribed endothelioma of this configuration is such a rarity that the possibility would certainly not be considered without biopsy. The mass was too well circumscribed and rounded to fit in with a carcinoma of the lung of the solid block type. The picture could just as well have indicated a cyst or an encapsulated empyema. I believe a needle was inserted in the mass about a

year ago and about 10 c.c. of clear fluid, not further described, were obtained. With nothing but these facts to go by, I do not believe any very aggressive action was indicated at that time. Now the diagnosis was made possible only through the bulging of the tumor between the ribs and the result of the biopsy was a surprise. It is gratifying to think that the patient was no worse off today than he would have been if it had been possible to decide about an operation a year ago.

One diagnostic procedure, which proves of value in cases of this type, should be mentioned: a pneumothorax performed before an operation. With the collapse of the lung new possibilities offer themselves for X-ray differentiation between intra- and extra-pulmonary tumors. Adhesions in one direction or other likewise present themselves. Jacobsen and Key used to be very fond of this procedure before operation but of course it is not always necessary.

DR. SCHWYZER (St. Paul): If we had made a preliminary diagnostic pneumothorax we would have had the lung fall away entirely from the growth and we could then have gone in with more assurance of success. However, even if otherwise, it would not have changed our decision to explore; and as a part was adherent to the diaphragm by soft friable neoplastic tissue, it would probably have been torn off and given a chance for dissemination in the pleura.

Dr. Gilfillan's case is the only one that I have heard of that was operated on. I looked through several books rather hurriedly this afternoon and could not find a case.

I forgot to mention the fact that a year ago there was some fluid taken away from this growth.

The sensible thing to do, after the wound is healed, will be raying the area. We shall probably use radium, very strongly filtered so that the skin will not be damaged. I have a case in the hospital now who, a year ago, had had a little over 7,000 mg. hours in one session after an operation of an acoustic tumor in the cerebellopontile angle. No hair fell out after that application. She is in the hospital again now and getting this time 6,000 mg. hours.

DR. ZIMMERMAN (St. Paul): I would like to ask Dr. Schwyzer how he could do this without positive pressure?

DR. SCHWYZER: We used positive pressure. It was done in the simplest way. The patient was getting oxygen all the time through tubes put into the nose, with about 20 cm. water pressure. The patient did not have his mouth closed; there was just a little extra oxygen and a little extra pressure. I could have steadied the mediastinum by getting hold of the lung with a probang or we could have increased the oxygen pressure and ballooned the lung, but it was not necessary, and thus we had good room to work in with the lung almost collapsed. With the spinal anesthesia the patient was breathing very quietly. If there had been any difficulty I could have had more pressure by holding the patient's mouth closed or by increasing the pressure, or both. If the tumor had been adherent to the lung, and knowing it had a clear outline into the lung, I could very readily have divided the lung tissues be-

tween clamps and sewed it after the resection. I would have done just what Dr. Gilfillan did in his case where he had such a fine surgical result.

Dr. C. Naumann McCloud (St. Paul), retiring President, then read his Presidential Address entitled "Essential Hypertension," and asked for discussion from the members.

Dr. McCloud: Before presenting my paper, I wish to thank the Society for the honor shown me in electing me President of the Academy to have served during the past fifteen months. It has been a very enjoyable year, and I particularly want to thank the members of the Executive Committee; they have been of very great help to me in conducting the proceedings of the organization, and in revising and putting in force the new Constitution. May I also state that our past Secretary, Dr. Carl Drake, has rendered a great deal of assistance to me, and I am sure that with the new efficient Secretary and the incoming officers, we should have a very profitable year before us.

I am very much interested in the subject of medical selection in connection with life insurance, and as the subject of hypertension has been causing us a great deal of perplexity, I thought this subject might be presented to the Academy tonight. In looking up the literature I was surprised to find how little there was published on the subject and, though the President's address is not usually open for discussion, as there are several authorities on the subject of blood pressure here this evening, I would be very glad to have my paper discussed.

DISCUSSION

Dr. H. T. NIPPERT (St. Paul): I would like to ask the doctor about the normal diastolic pressure according to different ages: for instance, what is considered the normal diastolic pressure between 20-30 years and between 30-40, and so on.

Dr. McCloud: Speaking generally for life insurance companies, it would fluctuate, but it would vary 8 to 14 points above the average.

Dr. E. L. GARDNER (Minneapolis): Dr. Bell's statistics on autopsied cases may place the percentage of cardiac deaths in hypertension rather high. In my experience, relatives object to postmortem examinations where the head is to be examined, and this may make the number of cerebral cases which are autopsied relatively much lower than those of cardiac failure.

Dr. McCloud: This is the experience of all medical directors that they look upon the cause of death with a good deal of misgiving in a good many of these cases. For instance, just yesterday a man died a sudden death and the attending physician gave the cause of death as "edema of the lungs." From

all symptoms it was coronary thrombosis, and the autopsy confirmed this diagnosis.

I would like very much to have Dr. Bell, for he can so beautifully do it, discuss the subject brought up by Dr. Gardner.

Dr. E. T. BELL (Minneapolis): I am very much interested in Dr. McCloud's paper. The diastolic pressure has not been given as much attention as it deserves. I have not made much use of it in my studies because there seemed to be so much variation and irregularity that it could not be trusted in establishing the diagnosis of hypertension. If we use these two pressures we will find three groups: (1) A big group in which both the systolic and diastolic are elevated; (2) Cases in which the systolic is above normal and the diastolic is normal, and (3) A group in which the systolic is normal and the diastolic above normal. There are cases of hypertension with a normal diastolic pressure. The prognostic significance of the diastolic pressure must be determined from the experience of insurance companies. It will be a number of years before we have this information. Strange to say, there are not many statistical studies of very significant figures on the prognostic significance of high systolic pressure. Fischer found no increased mortality in accepted risks with systolic pressures of 140 to 150 mm. Hg.; but the death rate is much above the expected mortality with pressures above 150 mm. Hg. I have always considered a systolic pressure above 150, on repeated examinations, as hypertension.

Dr. Wetherby reported recently that in Dispensary patients over half above 50 years of age had a systolic pressure above 150 mm. Hg. Dr. Major found about the same proportion in the Ancker Hospital and Dispensary. Major found a systolic pressure above 150 mm. Hg. in about 40 per cent of the visitors above 50 years of age at the Ancker Hospital.

We are no longer sure what constitutes hypertension in the older age groups. Life insurance statistics deal largely with selected groups under 50 years of age. One of the first things we must find out is the normal pressure of the older groups. We have gone on the supposition that anything above 150 is hypertension. In about 12,000 postmortems which we have performed, 15 per cent of those over 50 years of age died from hypertension.

We have little or no knowledge as to the cause of primary hypertension. We have a lot of cases called secondary hypertension, practically all of which are secondary to kidney disease. That is the reason why Theodor Fahr is so strong on the kidney as the basis of hypertension. A fulminating primary hypertension is probably renal in origin; but in the great majority of hypertension cases there is not preliminary kidney disease but some unknown disturbance which keeps up a constant spasm of the arterioles of the body. In some 80 per cent the arteriolar system is involved. In the early cases of hypertension you can relax that spasm with nitrates. There is much evidence that the main thing is spasm, but what is the cause of that spasm? The only known factor in primary hypertension is inheritance. If it is inherited there must be some sort of physiological basis for it. Ninety per cent

of the cases of hypertension appear after the age of 40 years. Hypertension is rare in young people.

DR. J. F. FULTON (St. Paul): Fundus changes constitute a very important factor in the clinical findings of hypertension so satisfactorily described by Dr. McCloud in his very valuable paper this evening. Asthenopia associated with come-and-go vision, together with highly congested disc and retina, is frequently an early symptom. High blood pressure and retinal arteriosclerosis frequently exist independently of each other. There are those who claim that fundus changes are met with in less than 50 per cent of the cases of hypertension; on the other hand, there are others who maintain that circulatory retinal changes are always found in persistent high hypertension if they are carefully investigated, commencing with spasm of the smaller vessels, resulting in narrowing of the arteries, kinking of the veins, engorgement and tortuosity, commencing twisting of the smaller arteries either between disc and macula or more frequently in the periphery, associated with the formation of small white spots in the retinal structure increasing in number as the condition lasts. Retinal hemorrhages demand careful study. The large flame-shaped hemorrhages taking place in the fibrous layers of the retina associated with edema are indicative of serious kidney pathology, while the small round punctate hemorrhages situated in the deeper retinal structures are met with and without hypertension. There is no relationship, however, between the height of blood pressure and the degree of arteriosclerosis. The white streak frequently seen along the course of the vessel is indicative of lymphatic complications.

I wish to call attention to the recently constructed self-illuminated ophthalmoscope as being of great value in detecting early changes in the arterioles in the retina.

DR. R. T. LAVAKE (Minneapolis): I would like to ask Dr. Bell about the early cases, those in young people. What does he mean when he says that he doesn't believe there is very much hypertension in the very young? How young? I have had several cases sent to me by men thinking that the patient had a toxemia of pregnancy, and I thought so, too, until I had followed them carefully for a considerable time. One was a girl of 20. She had a blood pressure of 160. On her father's side they all had hypertension. She never showed any kidney trouble so far as I could find, and she showed no nitrogen retention. She went all through pregnancy without any change in blood pressure.

DR. BELL: I had reference particularly to the college ages. Hypertension is rare in college students. We had one case that began at 5 years of age; but I do not believe that it often begins in early life.

DR. LAVAKE: Another interesting feature was that this patient moved away and came back ten years later, and went through another pregnancy. The pressure had not varied in ten years.

DR. McCLOUD (closing): I would like to rise to the defense of the insurance statistics and our "beloved" examiners. In the 707,000 cases that were studied, those cases were not examined by "ordinary practitioners," but by experienced men, many of

them were medical referees and medical directors who spend nearly all of their time doing nothing but that sort of thing. However, that number constituted just a small portion of the number of cases examined; these were merely selected cases by that group of examiners. There were only 7,000 in that group that were rateable cases.

I wish to thank the members very much for their discussion of this paper.

The meeting adjourned.

R. T. LAVAKE, M.D.
Secretary

MISCELLANY

SIMPLE APPARATUS FOR PRODUCING NEGATIVE PRESSURE FOLLOWING THORACIC OPERATIONS



In a large percentage of empyema cases the best known method of emptying the pleural cavities is by introducing a catheter into the cavity through a stab wound in the most dependent point of the chest, and direct drainage made without the entrance of air either by a drainage of the pus into a receptacle containing water acting as a seal, or by direct aspiration with a pump whereby the suction of the fluid can be aspirated without the admittance of air, thus maintaining a negative pressure, thereby gradually expanding the lung.

Nature abhors a vacuum. The cardinal principle of the rapid recovery from an infected pleural cavity is the expansion of the lung by producing a vacuum after the aspiration of the pus. The lung structure will necessarily expand to fill the void and thereby eliminate the cavity.

Dr. Willie Meyer has reviewed, in a recent publication, the literature on the subject of mechanical adjuncts for producing sufficient drainage, and to a limited extent maintaining a vacuum of the infected cavity. Kenyon's method was employed by Dr. Meyer in a number of cases with the most satisfactory results. The principle is essentially the same as the stab wound into the pleural cavity and

introduction of a catheter attached to a rubber tube immersed in a vessel containing water. The hydrostatic fall of the fluid from its bed to the floor will drain the cavity and so produce a limited negative pressure. It is my experience in a number of these cases that after three or four days' time, air will leak into the chest cavity around the drainage tube, and negative pressure will become nil.

A few years ago, Dr. Quain, of Bismarck, devised a suction apparatus for drainage, activated by a small electric motor, but I believe this complicated apparatus is not at present time employed in his Clinic. I have devised a simple apparatus which can be used either as a Keynon's drain or as a vacuum valve, whereby the fluid can be aspirated by the use of ordinary piston syringe. The air in the pleural cavity can be partially or fully exhausted, and a vacuum can be obtained for an indefinite length of time. This vacuum will necessarily expand the compressed lung to such a degree that it will completely fill the pleural cavity.

The apparatus, a most primitive one, is made from an inner tube of a bicycle tire, or the inner tube of a small automobile tire of any well-known make. We take about five or six inches, including the valve stem. The rubber tube is then split at the edges, trimmed to produce an oval outline, and the stem shortened to the length of one inch by a gunsmith. Its lumen is reamed out to twice its original caliber. The outside threads were also welded off.

Mode of operation: First the patient's chest is thoroughly cleansed from grease, oil, or any other foreign material. It is then painted over with bicycle tire cement and allowed to dry for ten to fifteen minutes. The concave or inner side of the tube is similarly coated with bicycle cement, which is supposedly sterile. The catheter is inserted in the reamed-out barrel, or opening, in the stem, and is guided into the chest opening. The rubber pad is pressed firmly to the chest and held there for a few minutes until it is set to the adhesive previously smeared on the skin. After this is properly applied and, if the discharges are not too profuse, this vacuum is sealed by a pair of forceps. The vacuum is maintained for from four to six days, when it will gradually loosen from the skin. In the meantime the chest cavity can be irrigated, and every drop of liquid can be aspirated, and afterwards a vacuum can again be produced by exhaustion of the air with a 20 CC Luc syringe.

So far I have used no gauge for measuring its vacuum, merely judging by the feeling and sensation of the patient as to the safety limit of the vacuum. This can be increased from time to time and will in a majority of cases expand the lung to sufficient degree to refill the cavity. However, in older cases where the lung structure has undergone infiltration of connective tissue or there may be tubercular infarct in the structure, or hepatization with edema, forcible expansion has to be employed with care. In my experience I have never encountered a case where hemorrhage or a bronchiectasis complicated this method of producing negative pressure with rapid expansion of the lungs.

J. E. ENGSTAD, M.D.
Grand Forks, N. D.

BOOK NOTICES

A TEXT-BOOK ON ORTHOPEDIC SURGERY. By Willis C. Campbell, M.D., F.A.C.S. With 507 illustrations. Philadelphia and London: W. B. Saunders Company, 1930. Price, cloth, \$8.50.

The first thing which appealed to the reviewer about this excellent text-book on Orthopedic Surgery is the new but most satisfactory arrangement of contents. There are three main headings: affections of the joints, affections of the bones and affections of the soft tissues. Preliminary to the description of these conditions there are fifty pages devoted to a much neglected subject; that of making a careful orthopedic examination, both of the body as a whole and of the mechanism and characteristics of each member. The following fifty pages are also devoted to an important phase: that of the different forms of apparatus used in reference to different parts and to varying conditions.

Chapter VIII should be of especial interest to men who deny the existence of such an entity; it is entitled Traumatic Arthritis. A book by Willis C. Campbell would be incomplete without a chapter on arthroplasties; Chapter VII is devoted to this subject.

The book reads easily, is well bound, printed in good type on durable paper and well illustrated with many good photographs, X-rays and clear diagrams. In fact, it is one of the best new text-books on Orthopedics, covering in a concise manner the forms of treatments which have stood the test of time and omitting those which have been discarded as unsuccessful.

—PAUL W. GIESSLER, M.D.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS. By George W. Norris, M.D. and Henry R. M. Landis, M.D.; with a chapter on the transmission of sounds through the chest, by Charles M. Montgomery, M.D., and a chapter on the electrocardiograph in heart disease, by Edward Krumbhaar, M.D. 4th ed., rev., 954 pages with 478 illus. Philadelphia: W. B. Saunders Co., 1929. Cloth, \$10.00 net.

This is the fourth edition and follows closely the earlier editions with, of course, the addition of new material.

The authors insist on the clinical practice of medicine with the aid and corroboration of the laboratory instead of the reverse and their outlook is that of the clinician. The descriptions of procedures are clear and the illustrations are beautiful and include clinical photographs, diagrams, photographs of longitudinal and cross sections of the body and graphs.

In the section on diseases of the chest, each disease is discussed with its pathology and symptoms and diagnosis, but there is no word of treatment whatever. Mediastinal tumors are mentioned only in passing but not discussed. In short, this volume is on diagnosis primarily and as such fills a worthy object.

—O. H. B. SWEETSER, JR., M.D.

THE JOURNAL-LANCET

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MINNEAPOLIS, MARCH 1, 1930

"—BUT, DOCTOR, HOW ABOUT US?"

The editor picked up the Hearst's International-Cosmopolitan for April, 1929, and found an article entitled as above—a very sensible article written by Chester T. Crowell and calling attention to the fact that people have symptoms, whatever their complaint, that demand attention. And in the editor's work as a neurologist he finds that it is very necessary to sympathize with and to take great care and particular care of the nervous individual. It may be hard at times but usually this course works out very well.

The article shows many illustrations of people with "nerves," with bandaged limbs and varying facial expressions, and depicts one man with his hands held to his head to indicate that he had a headache, illustrating very definitely how directly we would ask patients questions about how they were or what they were doing or what the nature of their trouble was. In most of the cases cited the doctors were inclined to be very easy in their diagnosis while the patient was very uneasy and was hoping something would be done for his special complaint.

Quoting from the article, "Mary Elizabeth and Madeleine sat at one side of the table, Chester, Jr., and Ted at the other. Ted was the baby, one year old; Mary Elizabeth, the eldest, was seven. All four of them were plain-

ly starving to death. There was food on the table and they ate, but they couldn't retain even a glass of water. They had whooping-cough. Poor little Ted was so weak that even his ravenous hunger no longer gave him the strength to hold up his head. It drooped inch by inch and then—plop!—into his plate as weariness closed his eyes in spite of his heroic resolution to convey another spoonful of food "to his mouth." A physician was summoned as soon as it was realized that the children were ill. He confirmed the guess that the illness was really whooping-cough, and then he said: "Keep them in the fresh air and sunlight as much as possible." There was a little more advice about food and that was about all. It would be a good standard, stable advice for a nursing mother, a prize-fighter, or a gentleman recovering from the annual reunion of his college class. It would also be good advice for a person in perfect health. "No prescriptions?" he was asked. "No, no prescriptions." "Anything to relieve the coughing spells?" "No, nothing." (And yet the columns of the magazines and medical journals are filled with advertisements for medicines which relieve or cure whooping-cough.)

This simply shows the relationship between the doctor and the family and how necessary it is to pay attention to the smallest things and do all in one's power to relieve even those who are nervous, for if anyone suffers it is the nervous patient.

Referring again to the case of whooping-cough mentioned above, various doctors considered various things and and one doctor suggested some "Alpine treatments." He had recently installed the equipment for giving such treatments so there was every reason why he should want some patients. He thought the treatments could not do the patient any harm. He had little else to offer. Why not try them? The children took the treatments every day and the doctor said they had the mildest cases of whooping cough he had ever seen! This is not an advertisement for Alpine rays, for there are other cases of whooping cough that suffered during the entire season and were not benefited by any such treatment in any way.

The writer of the article goes on to say: "Of all the men of science it seems to me that physicians as a group are the most lacking in the type of imagination essential to scientific progress. I have known scores of them, not always, of course, as head of a large household, but more often as journalist, and in view of their many outstanding merits it seems odd to me that

their conception of their function in life should be so different from what their patients would like it to be. They are as brave as any men; in generosity and true charity I doubt that they have any equals; but I am puzzled that they are not more interested in the universal ailments of mankind regardless of whether those afflictions are likely to prove fatal or not."

It is very noticeable in the many cases that physicians see that they do not investigate them carefully enough to relieve them of their seemingly simple symptoms. Those who practice among nervous people find that they have to go into the most minute details to gain the confidence and assurance of the patient before they can note any improvement, and then a simple remedy completes the cure. Many of the achievements and efforts of medical science during the past fifteen years relate to prolongation of life,—yet if the poor patient did but know it, and even the poor doctor did but know it, many people live longer if they are told and taught how to live. But the doctor sometimes forgets about that. He regulates their diet and forgets to tell the patient what he ought to eat and the editor feels that if he instructed his patients on diet like Mr. Muldoon does—to eat what is good for you, or what is necessary, and avoid those things that disagree with you—the patients would get along better. Of course a diet list helps out a good many patients who are very easily impressed by the fact that they are to live by diet alone—when, as a matter of fact, we know that diet is only a part of any kind of treatment except in a diabetes or chronic nephritis.

IODINE RESEARCH PROGRAM

Since January 1, 1928, Mellon Institute of Industrial Research, Pittsburgh, Pa., has had in operation a Multiple Industrial Fellowship founded for the purpose of investigating the properties and uses of iodine. This Fellowship, which is sustained by the Iodine Educational Bureau, 64 Water Street, New York, N. Y., is headed by Dr. George M. Karns, formerly a member of the chemical faculty of the University of Illinois. All results of the Fellowship studies will be published.

Recently, through an additional appropriation from the Fellowship donor, Mellon Institute,

acting for the Iodine Fellowship, has made arrangements for the study of certain iodine problems in other institutions that have special facilities for such types of work. On October 7, 1929, a scholarship was founded at the Philadelphia College of Pharmacy and Science by a research grant from the Institute. This scholarship—which, for the college year 1929-30, will be held by Mr. L. F. Tice—will have for its aim a broad investigation of vehicles and solvents for iodine, especially for external use in medicine. A large number of new organic chemicals will be studied as solvents with the object of evolving, if possible, a more satisfactory preparation than the alcoholic tincture now in use. The research, for which a definite program has been laid down, will be supervised by Professor Charles H. LaWall with the advisory collaboration of other faculty members of the Philadelphia College of Pharmacy and Science and with the direct co-operation of Dr. Karns. The investigational findings of the scholarship will be reported in the literature.

Another phase of the research program includes a grant made on September 26, 1929, to the Pennsylvania State College for a comprehensive investigation—under the direction of Professor E. B. Forbes of the Institute of Animal Nutrition—of the nutritional place and value of iodine in the feeding of live stock. Despite the large amount of work which has been done on the rôle of iodine in metabolism, especially with reference to the thyroid, very little is known regarding the specific dietetic aspect of this element, particularly in the lower animals. Dr. Karns and his co-workers on the Iodine Fellowship of Mellon Institute are co-operating closely with Dr. Forbes and his staff, mainly by preparing standardized feeds. The findings of this research also will be made available to the public, in accordance with the Iodine Educational Bureau's policy of disseminating to every one interested the results of all investigations made under its egis.

Mellon Institute is giving considerable to the founding of a research scholarship in a medical school for the purpose of aiding in the solution of incompletely answered questions respecting the utility of iodine in internal medicine. A number of pharmacologists are aiding the Institute in determining a program for such pharmacodynamic inquiry.

NEWS ITEMS

Dr. R. W. Campbell, Bisbee, N. D., is now located at New Richmond, Wis.

Dr. Arnold Larson, recently of Duluth, is now practicing in Detroit Lakes, Minn.

Dr. F. B. Hicks was appointed county physician for the year 1930, of Cook County, Minn.

Dr. Donald H. Dewey, of St. Paul, and Dr. Lyle V. Berghs, of Minneapolis, are now located in Owatonna.

Dr. H. E. Kellogg, practicing physician in Brookings, S. D., was married February 11 to Miss Julia Cook.

Dr. Herman Drill, of Minneapolis, Minn., is now associated with Dr. Orville N. Nelson, of Battle Lake, Minn.

Dr. J. F. Turgeson, Jamestown, N. D., has moved to Grand Forks, where he will continue in general practice.

Dr. W. T. Hagerty, who for the past several years has been practicing in St. Paul, has moved to Hampton, Minn.

Dr. H. C. Parson, Watertown, S. D., has moved to Iowa City, Iowa, where he will continue general practice.

A meeting was held of the Mount Powell Medical Society, at Warm Springs, Mont., February 12. Interesting films and papers were presented.

Dr. Charles L. Nelson, of Fergus Falls, Minn., and a graduate of the University of Minnesota, has bought the practice of Dr. D. E. Atkinson, at Minot, N. D.

Dr. A. C. Strachauer has gone to California for a short vacation with his parents, Dr. and Mrs. Clarence Strachauer, who are spending the winter in Pasadena.

Dr. T. C. Quigley, who practiced in Owatonna, Minn., for the past seven years, has moved to Rochester, Minn., where he will be associated with the Mayo Clinic.

Dr. G. G. Cottam, who has been located at Sioux Falls, S. D., for several years, has recently moved to St. Paul, where he will open offices for general practice.

Dr. R. V. Jolin, recently interne in the University Hospital, Minneapolis, is now located at Lake Park, Minn., having taken over the practice of Dr. O. K. Winberg.

Dr. Henry Y. Bates, Wheaton, Minn., passed away February 2, at the age of 76 years. Dr. Bates was graduated from the Eclectic Medical Institute of Cincinnati in 1876.

Dr. H. W. Froehlich, of Thief River Falls, was informed by the war department that he had been promoted to the rank of captain in the medical officers' reserve corps.

Dr. Wm. O. McLane has opened his office in Sleepy Eye, Minn. Dr. McLane was graduated from Rush College of the University of Chicago, and practiced for some time in Minneapolis.

Dr. E. W. Young, 78, and a pioneer resident of Minneapolis, died February 19 at his home. Dr. Young had practiced in Minneapolis since 1896, and was born in Randolph, New York.

Dr. and Mrs. W. W. Higgs, of Park Rapids, Minn., left February 5, for a motor trip to the South, their destination being New Orleans. Dr. Higgs plans to return sometime after February.

Dr. Ernest S. Mariette, Superintendent of the Glen Lake Sanatorium, and one of the country's leading authorities on tuberculosis, left February 15, for Florida, where he will spend the rest of the winter.

Dr. Louis M. Benepe, prominent St. Paul physician, died February 14, at his home. Dr. Benepe was graduated from the University of Missouri in 1888 and was 68 years old at the time he died.

Funeral services were held February 6 for Dr. Otto H. Heffter, of Great Falls, Mont. Dr. Heffter was president of the Deaconess hospital staff of physicians and was the only child of the late Dr. George Heffter.

Dr. R. D. Wilson, of Aberdeen, S. D., was elected president of the district medical society to succeed Dr. C. C. Lundquist, of Leola, at their annual convention in Aberdeen. Dr. G. E. Countryman, Aberdeen, was elected vice president and Dr. R. C. Hayer, Aberdeen, was re-elected secretary.

At the first meeting of the year of the Grand Forks District Medical Society, Dr. W. A. Liebeler, the Secretary, informs us an interesting paper on the subject "The Value of Intravenous Fluids" was presented by Dr. W. W. Witherstine, over which interesting discussion was held. The meeting was held February 19, 1930.

A regular meeting of the Watertown District Medical Society was held at the Lincoln Hotel on February 18, 1930, following luncheon.

A very instructive talk was given by Dr. A. E. Bostrom, State Epidemiologist, on Scarlet Fever and the present method of combating it. A general discussion of the above, by all members present, followed. A vote of thanks by the Society was tendered Dr. Bostrom on his excellent paper.

For many years the thriving little city of Harvey, N. D., has been confronted with the responsibility of supporting two hospitals. Recently, however, one of the two voluntarily closed, its equipment being taken over by Dr. J. J. Seibel, of the remaining hospital, the Reimsche Memorial. Miss Mabel Brecto, R.N., supervisor of the closed hospital, assumes the care of the Reimsche and it is reported the local doctors present a united front in the new situation.

The meeting of the Sixth District Medical Society was held at Bismarck, N. D., February 18, 1930. Dinner was served to thirty-seven members and thirteen visitors in the Patterson Hotel, at 7:00 P. M. Immediately following the dinner the regular business meeting was held. The following scientific program was then presented: 1. "The Common Causes of Leukorrhoea and its Treatment," by Dr. Percy L. Owens, Bismarck, N. D. 2. "The Causes and Prevention of Malpractice Suits," by Dr. John Crawford, New Rockford, N. D., President of the State Medical Society. 3. Motion Pictures—Obstetrics and Gynecology. These pictures were ones made at the Wertheim Clinic in Austria by the late Prof. Wertheim and Prof. Weibel.

An Account of the Sioux Valley Medical Meeting

The thirty-fifth annual winter session of the Sioux Valley Medical Association which was held at Sioux City, Iowa, January 29 and 30, 1930, proved to be the most largely attended and interesting meeting in the history of the Society. When Dr. Emil C. Junger, of Soldier, Iowa, President of the Society, called the meeting to order, Thursday morning in the main ball room of the Martin Hotel, he was greeted by a packed auditorium of three hundred physicians and immediately a talking motion picture by Dr. Joseph B. DeLee, of Chicago, was shown depicting Extraperitoneal Cesarean section. Other pictures followed showing Perineal Prostatectomy, Nephrectomy with Paravertebral Anesthesia and Diaphragmatic Hernia. Dr. Henry F. Helmholz, Head of Department of Pediatrics, Mayo Clinic, Rochester, Minn., then conducted a very interesting Pediatric clinic demonstrating a large number of cases. Dr. Hilding Berglund, Head of Dept. of Internal Medicine, University of Minnesota Medical School, Minneapolis, Minn., conducted

a medical clinic. Dr. J. F. Ritter, of Maquoketa, Iowa, gave a paper on, "Principles of Practical Endocrine Therapy" and injected a series of cases with a gland product for the purpose of reducing high blood pressure. This was followed by other motion pictures. During the noon hour the doctors appearing on the program and others were entertained at luncheon with Dr. Wm. Jepson, of Sioux City, acting as host.

The afternoon session consisted of papers by Dr. J. W. Duncan, Associate Professor of Surgery, Creighton University, Omaha, Neb. This was followed by a talk by Dr. John H. Peck, President of Iowa State Medical Society, Des Moines, Iowa, on "Some Features of Tuberculosis", then a paper was given by Dr. Henry F. Helmholz, of Rochester, Minn., on "Diagnosis and Treatment of Pyelitis in Infancy and Childhood." The afternoon session was concluded by Dr. Hilding Berglund, Minneapolis, Minn., who gave a talk on "Analysis of the Anemia Situation." The papers were all wonderfully illustrated by lantern slides and motion pictures and were well received. At 6:30 P. M., the doctors and their wives gathered for the annual banquet with the hall taxed to capacity. During the dinner hour entertainment was furnished by the radio broadcasting orchestra, of Sioux Falls, S. D., accompanied by Marion Y. Fonville, of Sioux Falls, and Mrs. Frederick Roost of Sioux City as soloists, Mrs. P. B. McLaughlin and Mrs. J. C. Decker, of Sioux City, assisted in the arrangements for the banquet. At the conclusion of the dinner Dr. Willard T. Conley extended welcome to the guests and introduced Dr. W. R. Brock, of Sheldon, Iowa, who acted as toastmaster. The gathering was addressed by Dr. E. C. Junger, of Soldier, Iowa, President of the Society; Dr. Herman James, President of the University of South Dakota; Dr. John H. Peck, President of Iowa State Medical Society; Dr. Wm. Jepson, of Sioux City; Dr. Arthur E. Hertzler, of Halstead, Kansas; Dr. G. R. Albertson, Dean of Medical School, University of South Dakota; Dr. Henry F. Helmholz, Rochester, Minn.; and Vernon D. Blank, Business Manager of the Iowa State Medical Society.

The second day's session opened with Dr. J. C. Ohlmacher, who is head of the Department of Pathology of the University of South Dakota Medical School and Vice President of the Association for South Dakota in the chair. A series of motion pictures were presented depicting Breech Delivery, Eclampsia and other features of surgical and obstetrical technic. Dr. Lewis J. Pollock, Head of Department of Neurology, Northwestern University Medical School, Chicago, Ill., conducted a Neurological Clinic; this was followed by a Goiter clinic with Dr. Arthur E. Hertzler, Head of Department of Surgery, University of Kansas Medical School in charge.

The afternoon session consisted of a paper, "The Diagnosis of Peripheral Nerve Lesions" by Dr. Lewis J. Pollock. This was followed by an illustrated lecture the "Diagnosis and Treatment of Arthritis and Allied Conditions" by Dr. Ernest E. Irons, Head of Department of Internal Medicine, and Dean of Rush Medical College, Chicago, Ill., and then Dr. Arthur E. Hertzler addressed the meeting with a humorous and a very much worth while

talk on "The Country Doctor Looks on Stomach Complaints." There was a brief business session at which time it was decided to hold the usual one day summer meeting at Sioux Falls, S. D., in conjunction with the meeting of the South Dakota State Medical Association. The officers of the Association were highly gratified by the large attendance and great interest manifested in this meeting. The entire student body of the Medical School of the University of South Dakota headed by Dr. G. R. Albertson their Dean in charge, were present for the two days' session. The local committee in charge were: Dr. John H. Henkin, chairman, Dr. Roy F. Bellaire, Dr. Willard T. Conley and Dr. J. A. Dales.

JOHN H. HENKINS, M.D.
Secretary

Work of the Minnesota Public Health Association

The Association reports that approximately 140 physicians enrolled in the seven short courses in tuberculosis held in Minnesota sanatoria last fall under the auspices of the Minnesota State Medical Association, the Minnesota Public Health Association, and the various sanatoria. The courses were a decided success, and many applications could not be accepted because of limitation in the size of classes.

In addition to lectures by various authorities on tuberculosis, practical demonstrations of tuberculin testing were given. Sanatorium children were given the test previous to the day of the meeting and examined by the visiting physicians for their reactions. X-ray pictures were also studied. Medical examinations of patients by the doctors enrolled were compared with the X-ray pictures.

Among the subjects which were discussed were included the following: Surgical Complications, Collapse Therapy, Tuberculosis in Children, X-ray, Sanatorium Management, History, Gastro-Intestinal Tuberculosis, Sanatorium Care of Tuberculosis in the State, Diagnosis, and Sanatorium Cases.

Among the physicians of the state who spoke at the various short course sessions were Dr. H. L. Taylor, Dr. F. F. Callahan, Dr. E. K. Geer, all of Pokegama Sanatorium; Dr. W. S. Broker, Ottertail County Sanatorium; Dr. Fred Kumm, Fair Oaks Lodge Sanatorium; Dr. L. H. Flancher, Sand Beach Sanatorium; Dr. W. G. Paradis, Sunnyrest Sanatorium; Dr. L. S. Jordan, Riverside Sanatorium; Dr. S. A. Slater, Southwestern Sanatorium; Dr. E. S. Mariette, Dr. F. L. Jennings, and others from Glen Lake Sanatorium; Dr. J. A. Myers, Dr. W. A. O'Brien, Dr. L. G. Rigler, Dr. W. H. Ude, and Dr. C. B. Wright, all of the teaching staff of the University of Minnesota; Dr. Arnold S. Anderson, executive secretary, State Board of Control, Tuberculosis Division; and Dr. George Earl, Chairman, Public Health Education Committee, Minnesota State Medical Association.

In connection with the majority of the short courses, public meetings were held in the evening and were well attended. A number of the short course staff gave popular health talks at these meetings and also addressed high school and college assemblies in the towns visited.

Christmas Seal Funds helped finance these courses.

CLASSIFIED ADVERTISEMENTS

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For Sale

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Wanted

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Wanted

A physician who can do some surgery, preferably with a wife who is a nurse. Arranging to build hospital. Write to H. Kopperva, Lake Preston, S. D.

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Location by physician and surgeon. Would like town where I can have hospital close by, where I can do my own surgical work. Address 694, care of this office.

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For Sale

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Laboratory technician would like to locate in Minneapolis or Montana or Dakotas. Can do general laboratory work, blood counts, blood chemistry, cultures and smears, basal metabolism, electric cardiogram, tissue work, and Kahn tests. Free to locate after March 15. Address 693, care of this office.

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LEPROSY*

(Notes on a visit to the National Leprosarium at Carville, La.)

BY H. E. MICHELSON, M.D.

Director Division of Dermatology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The government maintains a national hospital for the care of Leprosy patients at Carville, Louisiana, which is located about eighty miles up the Mississippi River from New Orleans. The hospital is under the direction of Dr. Denney, who is a surgeon in the Public Health Service. He is chief of a competent staff of resident and visiting physicians. Dr. Ralph Hopkins of Tulane University is the visiting Dermatologist. To these two gentlemen, I am indebted for the courtesies extended to me at the time of my short visit. The following notes are compiled largely from information gained there, and in reading various works on the subject of Leprosy.

Superstition and ignorance still hold sway in moulding public opinion concerning the leper. Syphilis and Tuberculosis are diseases that pathologically are very similar to Leprosy. The syphilitic is able to almost completely hide his identity. The tuberculous individual, on the other hand, receives every consideration, and is buoyed up by the visits of relatives and friends, is assured that a position is awaiting him on his release from the sanatorium, and too, he is hospitalized in his own locality. But the unfortunate leper, once his disease is discovered, is an outcast, even though the degree of infection is very low. He is transported, one might say, in secret, to a hospital which, although an

ideal institution, is located a long distance from his home. Cure cannot honestly be offered him, at any rate, it will be long delayed, and the outlook is more that of an incarcerated individual than that of a patient.

The problem of Leprosy is as old as the records of civilization, for the disease was known in Egypt among negro slaves from the Soudan in 1350 B. C., and is mentioned in early writings of India, as well as Biblical records, although the so-called white spot disease of literature is undoubtedly Leucoderma, Psoriasis, or some other benign condition, and not the Leprosy of the present day recognition.

The spread of Leprosy over the world is essentially the story of the conquest of different lands by troops of older nations and the importation of slaves. Tropical central Africa probably was the original seat of the disease, and this area still shows the most extensive high incidence of Leprosy. The whole history of the spread of Leprosy is that of a slowly communicable disease. The hereditary view rapidly lost ground after the discovery of the bacillus by Hansen in 1874.

Sir Leonard Rogers, the noted English authority on Leprosy, has made some very important observations of the world incidence of Leprosy in its relationship to high rainfall areas. He has noted a high rate in low, humid, wet regions in striking contrast to a low rate in even adjacent, high, dry areas. In mapping out this re-

*Presented before the Minnesota Academy of Medicine, January, 1929.

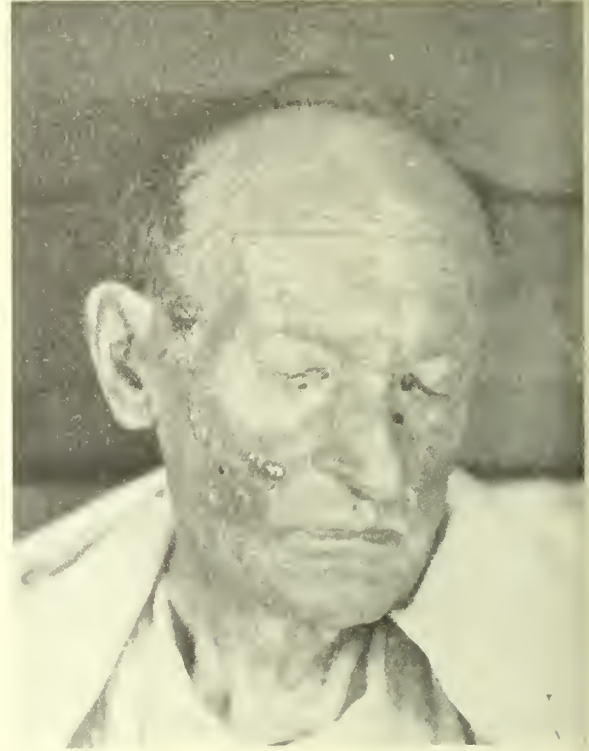
lationship, Rogers lays particular stress on humidity. He offers as a possible explanation the innumerable insect bites experienced in hot, humid countries, these wounds acting as a portal of entry for the bacilli.

COMMUNICABILITY OF LEPROSY

There is no longer any doubt about Leprosy being an infectious disease, but just how infective or the precise manner in which infection takes place is not known. Although it is communicable, nevertheless, the degree is very small. Dr. Hopkins has no record of a single attendant in Louisiana acquiring the disease in the thirty years that he has been intimately acquainted with the situation there. He has observed certain interesting facts concerning communicability. He has noted the preponderance of male patients in a ratio of about two males to one female. He has only occasionally found man and wife infected, but he has frequently seen parent and child and two or more children in the same family. Thirty per cent of his cases are related, therefore, he believes consanguinity plays a rôle. Dr. Hopkins cited to me a very remarkable observation. He diagnosed Leprosy in four girls of a family. They became members of the leper colony. The mother was clinically free from disease. She adopted a girl, who lived with her a number of years, and then left her new home. A few years later, she appeared for examination, and was found to be infected. Even though ancient writings point to an African origin, in the Louisiana colony, the negro inhabitants are very few in number, and Dr. Hopkins thinks they have a relatively high immunity.

Babies are not born with Leprosy. If they are to have the disease, they develop it later in life. The majority of cases develop before the twentieth year. Denney's Philippine statistics show that 44 per cent of children living with one or both leper parents for seven to ten years contracted the infection. House infections run about three to five per cent. Rogers has made a careful survey of five hundred cases of Leprosy, and concludes that close contact with a leper is usually necessary before infection takes place, while limited association with an unrecognized leper accounts for a number of cases in which the source of infection cannot be traced. Dr. Hopkins has seen American-born people contract Leprosy. Sir Leonard Rogers, on the other hand, states that only one recorded case of Leprosy has developed in England in the past forty years, an Irish soldier who slept

with his leprous brother over a period of eighteen months, and Sir Leonard states, "that was asking for it." In the temperate zones, given good sanitary surroundings, the disease does not tend to spread.



The patient was an American born in Michigan and who lived for a good many years in Cuba. He was admitted to the University Hospital because of a chronic eye condition and during his stay developed an acute cutaneous leprosy which was characterized by wide spread elevated red plaques, high fever and chills. Note the atrophy of the skin of the forearm. This condition has been discussed by Professor Oppenheim, of Vienna, under the title of "Atrophoderma Due to Leprosy."

The authorities in charge of the leper asylums in India have proposed plans for the control and

possible eradication of Leprosy. They include: (1) Segregation of highly infective advanced or maimed cases from the earlier and more hopeful cases. (2) Children of lepers who are healthy must be isolated from their infected parents, and frequently inspected so that they in turn may be treated when necessary. (3) Separate hospitals for early "curable" cases. (4) Vocational occupation is necessary for inmates to retain their morale. (5) Follow-up clinics for periodic examination of released cases, and for the examination of suspected individuals.

These measures and diligent, careful treatment hold out much hope, and it has been estimated by the authorities in charge in India, that thirty years of strict observance of such a regime would bring Leprosy under control there.

DESCRIPTION OF THE DISEASE

Leprosy is caused by the growth of Bacilli of Hansen in the human body, and the symptoms result from the tissue reactions to their presence.

In active cases the bacilli can be usually demonstrated by making smears from the serum ex-



The patient was a Mexican woman with the characteristic nodular form of leprosy with a low degree of activity. She had a son with no manifest lesions but repeated nasal smears showed organisms which were undoubtedly Hansen's bacilli.

tracted from the lobe of the ear, or by staining biopsy sections. Leprosy organisms do not grow in artificial media, nor can laboratory animals (guinea pigs, rabbits) be infected. Reenstra has inoculated monkeys successfully, I believe.

The bacilli are spread through the body by three routes:



1. By continuity through the lymph spaces.
2. Metastatic spread through the blood stream. Bacilli are undoubtedly carried in the blood stream. At the time of exacerbation with acute symptoms, the bacilli have easily been found sometimes by simply making a blood smear.
3. Auto-inoculation is also a manner of spread.

DISTRIBUTION IN THE BODY

The bacillus seems to be very selective in its choice of tissues. They have been found in the corium of the skin over almost the entire body, with the exception of the scalp, which is never involved.

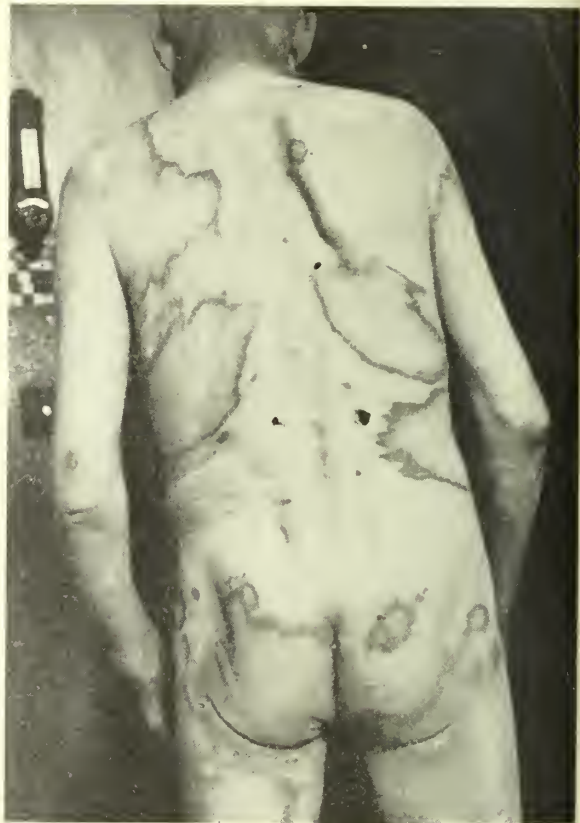
In both the skin and mucous membranes, leprous lesions are due to the presence of lepra bacilli. The epithelium is secondarily involved. The more superficial the lesion, the more chronic it is; and the fewer number of bacilli present the greater is the tendency to nerve manifestation. The exact location of the pathological reaction in the layers of the skin to some extent determines the clinical appearance. Later in the process, the hair follicles are destroyed, the larger hairs, being first affected; thus the hair of the eyebrows is rapidly destroyed, as are the hairs of the limbs, especially those on the hands and feet, but the fine hairs of the face and auricles survive for a much longer time. When the lesion resolves, the thin epithelium has lost its natural folds, has no hair, and is dry due to the absence of the glands, and its appearance is that of crushed tissue paper. Lesions of the skin may be diffuse or nodular. Nodules may be temporary or permanent. Corrugation is also noticed where swelling is marked. This gives rise to the so-called Leonine facies. Nodules may be quite soft or exceedingly hard, depending upon the amount of fibrous tissue formed. The deeper skin and mucous membrane lesions are liable to ulceration due to breaking down of the covering epithelium. Ulcerated lesions do not heal until the entire area of leprous tissue sloughs off.

Nerve lesions, according to the path by which the nerve has been invaded, are divided into (1) ascending and (2) metastatic types. In the ascending type, the infection takes place from the skin by passing up the sensory nerve endings into the nerve trunks, while in the second type, the infection is carried by the vasa vasorum direct to the connective tissue, rather than to the nerve trunks. The ascending type is very closely associated with the superficial type of skin Leprosy. The chief characteristic of this

kind of lesion is the anesthesia to light touch, and the absence of bacilli on microscopic examination. Because of the involvement of the various tissues of the area, the following changes may be noted:

1. Anidrosis (may be preceded by a hyperidrosis). This is one of the first signs to be manifested.

2. Depigmentation. This is not complete, as it is found in Leucoderma. A great deal has been written in lay literature about the white spots of Leprosy. As a matter of fact, the depigmentation accompanying certain lesions in Leprosy does not result in a white spot at all, merely a partial loss of pigment.



Case of maculo-anesthetic leprosy from the City and County Hospital collection. The lesions have a slight infiltrate and elevated border and pale center. There is complete anesthesia in the center of the lesions while at the periphery there is sometimes hyper-anesthesia. From this type it is difficult to recover the bacilli.

3. Hyperesthesia. May be found when the infection is spreading along the nerve trunk.

4. Anesthesia follows closely after the hyperaesthesia. If present is usually marked. Dr. Hopkins demonstrated to me on a patient the marked contrast between the hyperesthetic halo region of a macular lesion and the anesthetic

center. He thought one should not rely too much on the presence of anesthesia to light touch in making the diagnosis. If superficial anesthesia is present, deep anesthesia usually is, too, as tested by inserting a needle into the skin.

5. Parakeratotic and hyperkeratotic changes in the epithelium quite often result, especially a horny thickening of the palms and soles is found.

The metastatic type of nerve lesions is brought about by the nerve trunk being invaded by way of the vasa nervorum. All of the tissues supplied by the affected nerve show changes. The skin muscles and bone, of course, show the clinical findings. The skin shows the various lesions already described or occasionally blisters of atrophic type are seen. The nails are not involved early, but where deep skin lesions exist on the fingers, there is a marked thinning of the nail, and a longitudinal thinning of the nailbed appears. Later on the nail becomes waxy and pigmented, due to a defective keratinization. If the entire finger is altered due to a leprous infiltrate, the nail changes in a corresponding manner.

The small intrinsic muscles of the hand are,

as a rule, first affected. The hypothenar and thenar eminences are flattened, and later as the



This patient was a Scandinavian who had lived the major portion of his life in Minnesota and his skin condition had been present for many years. He had been treated under various diagnoses. This is a typical example of nodular leprosy. Note the alopecia of the outer half of the eyebrows but the presence of the mustache and the leonine facies.



muscular fibers are replaced by fibrous bands, the peculiar claw-like grip results. The flexors of the forearm are often paralyzed resulting in wrist drop. There is seldom involvement of the upper arm.

The bones of the extremities are often involved. The changes begin distally, and extend proximally. The entire bony framework may be absorbed until the fingers shrink down so that the nail is situated at the end of the metacarpal. In this manner, all of the phalanges of the entire hand may be lost. Septic abscesses and necrosis frequently complicate the process.

The lesions of the lower extremities correspond to those of the arms, but the resulting deformity is greater because of the different function of the part. The orthopedic staff at Carville have done some remarkable reconstructive work for those unfortunate patients who had paralysis of the foot muscles and the attending changes. Perforating ulcer is common es-

pecially in regions where shoes are not worn. In fact, Dr. Denney stated that perforating ulcer of the foot occurring in a patient in the tropics practically always meant Leprosy. Secondary infection with resulting lymphangitis and adenitis are common.

DISTRIBUTION

The parts most liable to leprous lesions are the parts most exposed. The protection of clothing plays a very distinct rôle in the matter of distribution. Dr. Hopkins called my attention to the fact that even the protection afforded the upper eyelid by its position, seemed to keep it free from lesions.

Initial lesions of the face and neck are common. This lesion may appear first as a mere erythematous blotch later to become a leprous one.

The eye is involved either directly or by infection of the nerves. All of the common types of eye diseases such as corneal ulcer, iritis, scleritis, etc., due to bacillus lepræ may be found. Rogers stated that from five to ten per cent of cases of nodular Leprosy have ophthalmic involvement. Lesions in the nose, mouth and pharynx are common. Lesions may spread from the skin to the mucous membranes, but the membrane lesions do not spread to the skin. Ulceration of mucosal lesions is common. In severe cases and during acute exacerbation, laryngeal involvement is usually present, often to a marked and serious degree.

In spite of the fact that Leprosy is a very widely disseminated and blood born infection, the internal organs are surprisingly free from involvement. I saw the fresh postmortem material from a severe case, and aside from laryngeal lesions, and a few nodes in the lung that Dr. Denney pointed out, nothing gross was noted. This is the rule. Lymph nodes, are, however, frequently invaded. The sex glands, especially in the male are very often involved, resulting in sterility. Microscopic lesions in various organs have been noted by MacCallum.

The mental state of the patients causes the attendants considerable alarm. Mania and melancholia are common. Dr. Hopkins stated that acute, violent mental changes occurred frequently, were of a cyclic nature, and at times were coincident with exacerbations of the disease, but also developed in cases that were apparently in a state of arrest.

The hopeless outlook, the social position, the need for enforced hospitalization, and the contact with cases that are in more advanced stages

of the disease, are all factors which greatly affect the psyche of the patients.

TREATMENT

The treatment of Leprosy may be considered under the headings of general, local and specific.

A. General treatment: Since Leprosy is much more prevalent in countries where poverty and unhygienic surroundings are very common, the value of general treatment is particularly striking.

B. Local treatment is largely a matter of cleansing and the use of antiseptic dressings. Various chemicals have been advocated for local use, but none of them have been proven to be very efficacious. Carbon dioxide snow freezing of nodules has brought about involution of the nodules and may thus add to the comfort of the patient, but this does not affect the course of the disease.

C. Specific treatment: The fact that the list of specific remedies for Leprosy is so long, is evidence enough that no one specific exists.

Metallic preparations, sera, vaccines, and vegetable oils and their derivatives, have been advocated and many apparent arrests or so-called cures have been reported resulting from the use of these.

For centuries various vegetable oils have been used in the treatment of Leprosy. Chaulmoogra oil or its derivatives have long been favorites, and today are much in use. The drug is administered by mouth or by injection. There is a variance of opinion on its specificity, but most observers believe that in early cases, the Chaulmoogra oil is of great service, but in no way is it to be compared with Arsphenamine in Syphilis.

It is not easy to test drugs in a reliable way in Leprosy. From the very nature of the disease, the drug is often given credit for a remission which is the natural course of the disease.

One might sum up therapy in Leprosy by saying that there is no specific remedy, but that Chaulmoogra oil or its derivatives have held out more hope for cure than any other remedies yet tried, and in event of amelioration of symptoms, ultimate cure must not be promised, for exacerbations come even after long periods of quiescence.

The treatment of the actual disease in its prolonged course must be distinguished from the treatment of such acute reactions as come and go.

PROGNOSIS

Prognosis in Leprosy is bad, although one should not make the statement in an unqualified manner. Given an early infection, with the best of general care and treatment supervised by an expert, some very good, at least temporary re-

sults have been reported. The criteria of so-called cure are freedom from clinical signs and negative bacterial examination of serum from the ear lobe over a period of two years.

I wish to acknowledge my indebtedness to Dr. Phillip K. Allen, associate in my clinic, for his assistance.

CLINICAL PATHOLOGICAL CONFERENCE

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The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the *Journal-Lancet* is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—26—52.

Man, 55. Ten years ago he was told by a life insurance examiner that he had high blood pressure; no symptoms at that time. Present illness began three years ago. After walking four or five blocks he would sometimes develop pain between the scapulae on the back. If he continued walking, the pain would extend down both of his arms. If he sat down to rest, the pain would disappear but would frequently recur on further effort. He would have intermissions of several weeks in which these attacks did not occur. Sometimes he noticed that the pain in his back would develop as soon as he began to play golf, but if he continued to play, it would finally pass off. The attacks of pain would occur on excitement as well as on exertion. The pain always began in the middle of the back between the shoulder blades and in severe attacks it would radiate out both arms. There was never any pain in the chest or epigastrium. He noticed a little shortness of breath during the attacks.

He developed a severe attack 12 days before his death which came on when he attempted to make an after-dinner talk. Two days after this attack began a pericardial friction rub was heard. At this time there was a moderate elevation of temperature, 101°. 13,000 leucocytes. A few râles in the bases of the lungs. A pericardial friction rub was heard for two days but after this he felt fairly comfortable.

The transverse measurement of the heart in a six-foot X-ray plate was 15.5 cm. The heart was boot-shaped, of the left ventricular type. No murmurs were heard at any time except during the last few days, after the disappearance of the friction rub, when a soft systolic murmur could be heard. The

systolic blood pressure three years ago was 160 and one year ago it was the same. On December 21, 1925, the blood pressure was 150/90. On January 7, during a severe attack it was 138 systolic. On the 17th, it was 116/84.

Electrocardiographs showed slight widening of the Q. R. S.; left ventricular preponderance; T not inverted. Blood Wassermann negative.

On the 17th the patient developed a sudden attack of dyspnea while lying in bed. He became unconscious and died within ten minutes.

Urine negative. Hemoglobin and erythrocytes normal.

Postmortem report. Weight about 165 pounds; subcutaneous fat 3 cm. thick over the abdomen. No fluid in the serous cavities. Heart 550 grams; roughening of the epicardium over the lower half of the anterior surface of the right ventricle; marked concentric hypertrophy of the left ventricle with some dilation; no hypertrophy of the right ventricle; the left coronary artery shows extreme calcification and narrowing of the lumen; the descending branch of this coronary is practically occluded by stenosis and thrombosis. In several places extensive infarction of the interventricular septum and of the lower half of the left ventricle, especially anteriorly. Sclerosis of the right coronary artery with moderate narrowing of the lumen. Moderate edema of the lungs.

Spleen weighs 325 grams with passive congestion. Liver weighs 1975 grams with passive congestion. The kidneys together weigh 440 grams; finely granular external surfaces; no atrophy of the cortex.

Diagnosis: Coronary sclerosis and thrombosis with infarction of the myocardium.

Comment: It is to be noted that the patient had a hypertension some time before the onset of his

attacks of cardiac pain. The blood pressure tends to fall in coronary disease because of anemia of the myocardium. Coronary sclerosis is associated with hypertension in the majority of instances. The stenosis and thrombosis usually involve the left coronary artery, particularly the descending muscular branch. The size of the heart also shows that hypertension existed previously. Terminal cardiac failure is indicated by the passive congestion of the spleen and liver.

Autopsy—26—64.

Boy, 12. Father died at 50 of general paresis. Mother living and fairly well; blood Wassermann, positive; has history of having had skin lesions of undetermined type and at present there are scars around her mouth.

Patient was always delicate although of superior intelligence. In October, 1925, he began to have an irregular fever which varied from normal to 102°. He was first seen by a physician at this time and the following physical findings were noted:

Abdomen was moderately distended and the superficial veins were markedly dilated. The spleen was palpated 9 cm. below the costal margin in the mid-clavicular line. The liver was large, hard, and nodular. There was thought to be some fluid in the abdomen.

Examination of the blood gave evidence of a secondary type of anemia. Blood Wassermann ++++. Urine normal.

Until two or three days before death the patient's condition remained about as described. On January 17, he developed a mild acute upper respiratory infection which, however, did not confine him to bed. He was up until the morning before death at which time he became nauseated and vomited considerably. After several severe attacks of vomiting he became faint and collapsed. This was followed by marked hematemesis which occurred three or four times during the last hours of life. Death, January 20, 1926. Definite jaundice was noted during the last few days.

Postmortem report: The peritoneal cavity contains 100 c.c. of clear fluid. The liver is bound to the diaphragm by fibrous adhesions. No changes in the heart or aorta. The spleen is enormously enlarged, weighing 1200 grams. The liver weighs 1700 grams and is markedly distorted and cut into irregular lobes and lobules. The deformity of the liver is due to multiple healed gummata, which are represented largely by scar tissue. The stomach contains a large amount of blood.

Diagnosis: Syphilitic cirrhosis of the liver with death from gastric hemorrhage.

Comment: This is a case of syphilis tarda which is characterized by involvement of the liver and spleen especially. Death was due to obstruction of the portal circulation in the liver with resulting hemorrhage. This is a very unusual form of death in congenital syphilis.

Autopsy—21—376.

Boy, 17; onset at 2:00 p. m., September 9, 1921, with five or six vomiting spells. Felt better; ate a good supper at 6:00 p. m. About 7:00 p. m. noticed he was having cramp-like pains in his hips, later

in the thighs; kept him awake most of the night. Had a temperature of 101°. The next morning he noticed weakness in the left leg and about noon weakness in the right arm. Physician called about 1:00 p. m.; found the quadriceps group of the left leg and the deltoid of the right arm in flaccid paralysis. Patient felt weak all over. Temperature 101°; pulse 100; respirations 24; blood pressure 130/70. Patient also complained of headache and rigidity of the neck. Pupils were equal and regular; reacted promptly to light and accommodation.

The left knee jerk was absent; the right was hyperactive and there was ankle clonus on the right side. At 9:00 a. m. patient had pains in his right leg; was unable to raise either arm or the left leg. No headache at this time. Could flex head better than previously. Temperature 100°; respiration 40; blood pressure 150/45. Began to have air-hunger at this time; also would wake up from sleep with a choking sensation. At 2:00 a. m., on the 11th, had great difficulty in breathing; respirations 60; blood pressure 200/10. Cyanosis was marked. At 6:00 a. m. breathing was very shallow. Patient died at 9:00 a. m. apparently of respiratory paralysis.

Postmortem report. Autopsy limited to the brain and spinal cord. No lesions found in the brain. Transverse sections of the spinal cord show slight discoloration and softening in the region of the anterior horns. Microscopic sections through various levels of the spinal cord show extensive leucocytic infiltration, especially in the gray substance but to some extent in the white substance of the cord. The anterior horn cells are largely destroyed.

Diagnosis: Acute anterior polyomyelitis.

Comment: Fatal cases of poliomyelitis usually die because of involvement of the respiratory center in the medulla. Often, as in this case, the paralysis seems to ascend from lower levels into the medulla.

Autopsy—29—1741.

Man, 75, who was admitted to hospital November 28, with complaint of constipation of four years duration. During day and night there were frequent attempts at defecation, but only small hard stools were passed. For two weeks there had been attacks of cramp-like abdominal pains. For seven hours before admission there had been severe nausea and vomiting. The abdominal pains had increased in severity a few hours before admission. He had had a prostatectomy at this hospital four years previously, at which time a benign tumor of the prostate was removed.

There had been pain in the left precordial region, left shoulder and left arm for 3 or 4 years, which had been intermittent on its onset, but was almost constant at the time of admission. Blood pressure was 160/110. There was a cataract in the left eye. Except for a few fine râles in the right base, the chest was apparently normal. The heart was of normal dimensions and the tones were good. There were no murmurs. The abdomen was greatly distended and tympanitic. No masses were palpable. There was increased tenderness in the left lower quadrant. Rectal examination was negative. X-ray showed an obstruction in the midportion of the sigmoid.

There was a moderate secondary anemia with

leucocytosis of 14,600 and 86% polymorphonuclears. The day following admission laparotomy was done. A firm mass was found in the midportion of the sigmoid and there was a large white nodule in the liver in the region of the falciform ligament. A colostomy was done and the abdomen closed without resection of the bowel. The patient grew steadily worse following operation and died December 2.

Postmortem report: No emaciation; slight edema of the feet and ankles; marked edema of the penis and scrotum. Recent operative wound. No peritonitis. Carcinoma of the sigmoid colon 7 cm. in diameter involving the entire circumference of the

intestine and causing practically complete occlusion of the lumen; elevated nodular external surface; mucosal surface rough and cauliflowerlike; shows ulceration. One metastasis 7 cm. in diameter in the liver. No metastases in the regional lymph nodes. Microscopic examination shows adenocarcinoma.

Diagnosis: Carcinoma of the sigmoid colon.

Comment: The clinical history indicates a slowly progressive stenosis of the lower intestine with a terminal acute intestinal obstruction. The diagnosis was practically established by the X-ray, since a stenosis of this type in the sigmoid in an elderly person is usually malignant.

THE DIAGNOSIS AND TREATMENT OF PYELITIS IN CHILDREN*

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Pyelitis is used here in a clinical sense to denote infection of the parenchyma of the kidney, the pelvis of the kidney, the ureters, and the bladder. The frequency with which pyelitis has been overlooked in the past and the undoubtedly large number of cases in which the presence of pus from the vagina or urethra has been ascribed to pyelitis has made it a condition that is often not recognized and almost as frequently mistakenly diagnosed. On this account it is essential that certain definite clinical examinations be carried out before a diagnosis of pyelitis is made.

The symptoms of pyelitis are such that there are no specific indications of the disease. In the period of infancy, unexplained fever is frequently due to infection of the urinary tract. In a typical case of pyelitis during the first year, the child usually has fever of 102° F. or more, is rather pale and restless, and has a peculiar anxious expression. Not infrequently diarrhea is present. In a severe case rigidity of the neck and convulsions suggest in no slight degree infection of the meninges.

One type of onset is in association with various infections of the upper respiratory tract, bronchitis, otitis, tonsillitis, and adenitis. In such cases persistent temperature beyond the usual period may be due to complicating pyelitis. There is nothing in the symptoms diagnostic of the infection, and only the presence of fever not adequately explained by the physical data suggests the urinary infection. In the marantic infant even the fever may be absent.

In the older child symptoms pointing to involvement of the urinary tract may also be absent. Occasionally one sees a patient who complains of low abdominal pain, burning on urination, or tenesmus, but as a rule local symptoms are absent. In the great number of cases pyelitis manifests itself as it does in the younger child, by fever resembling typhoid. With gradually rising fever and practically negative physical data, except for a possibly palpable spleen, and a leukocyte count that may be normal, the picture is suggestive of typhoid and may remain so until a negative Widal reaction and a positive culture of the urine establish the diagnosis of pyelitis. As in infancy, the disease not infrequently complicates infections of the upper respiratory tract, infections of the skin, and gastro-intestinal disturbances.

In the consideration of the diagnosis, one cannot omit a group of cases in which the condition, as far as the information which can be obtained from the history goes, has never had an acute stage. There are cases in which the condition persists for months, or even years, with obscure abdominal pain coming at intervals and lasting for a number of days, or there may be lack of appetite, pallor, and lack of energy without definite local manifestations. This group is particularly interesting because examination of the urine in these cases rarely shows more than small numbers of pus cells, and the diagnosis is not made unless the urine is cultured. In a series of sixty-eight girls coming to the clinic with a complaint other than that of the urinary tract, bacilluria was discovered in four cases. I do not mean to indicate by this that the com-

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plaints of these children were due to chronic infection of the urinary tract. Only if disappearance of symptoms follows clearing up of the infection is one justified in asserting that the symptoms were due to the urinary infection.

It is obvious, therefore, that diagnosis of infection of the urinary tract based on symptoms is only presumptive and under no circumstances can be made from symptoms alone.

EXAMINATION OF THE URINE

It is rather interesting that the emphasis placed by pediatricians on the examination of the urine has so overemphasized the significance of the presence of a few pus cells in the urine that at the present time I know that many cases are being diagnosed as pyelitis whenever an increased number of pus cells is found in urine obtained in the usual manner. After seeing this mode of diagnosis considered sufficient in some pediatric hospitals, I do not think it is surprising that men in general practice are satisfied with a diagnosis made from the examination of a single specimen of urine.

In order to guard against the danger of mistaking mild vaginitis complicating a febrile complaint for pyelitis, it is well to caution the mother to wash the external genitalia carefully before obtaining a specimen of urine. Such procedure will usually do away with the danger of misinterpreting the presence of pus cells in the urine. Even if evident pus is not present in the vagina, the irritation during febrile attacks is frequently sufficient to add a large number of pus cells to the urine as it is passed. This danger is greater in girls, but the presence of pus cells may be due to balanitis in boys. If the proper precautions are taken it is usually safe to assume that any large number of pus cells in the urine is due to pyelitis. Cases 1 and 2 are illustrative.

CASE 1.—A girl, aged three years, was brought to the clinic with a history of pyelitis of eight months' duration. Pus had been found in the urine but a culture had not been made. Following administration of methenamine, the pus had disappeared. She had never had fever. Six months before there had been an infection in the legs and she had had fever as high as 103° and 104° F. A second attack of pyelitis had been diagnosed. After nine or ten days' treatment she had recovered. About every two months she had circles under the eyes and the urine had become cloudy. There had been no frequency.

Aside from the presence of enlarged tonsils, the general examination was essentially negative. The first examination of the urine taken in the usual manner showed pus, graded 2. A second specimen,

taken after careful cleansing of the vagina was microscopically normal. Culture showed a few colonies of staphylococcus and a few of streptococcus, evidently a contamination.

CASE 2.—A girl, aged twelve years, came to the clinic with a history of pyelitis of eight months' as 101° F. at times for the last two years. She had been treated for pyelitis with vaccines and methenamine but without apparent benefit. There was considerable vaginal irritation. She had never been catheterized and cultures of the urine had not been made.

The child was overweight. The left ear was discharging purulent material. The urine contained pus, graded 3. There seemed to be a definite relation between the condition of the ear and the temperature. The leukocytes numbered 17,000 for each cubic millimeter, but the number decreased following the drop in temperature. Two specimens of catheterized urine were crystal-clear and cultures were negative.

In normal uncentrifuged urine obtained from boys without special precautions other than those mentioned, there are not more than two or three pus cells in the low-power field, and in the urine from girls there are not more than six or eight cells. The examination of centrifuged urine is of little value in the diagnosis of pyelitis. The absence of pus cells does not preclude infection of the urinary tract because in a particular case the infection may be in its early stage, not as yet showing pus cells, or it may be a unilateral infection with plugging of one ureter giving temporary absence of pus cells, or the case may be chronic, with the number of pus cells usually considered within normal limits.

TECHNIC OF CATHETERIZATION

The catheterization of the female infant is usually not difficult, because the urethra is distinctly visible when the labia minora are spread apart. Adhesions of the labia minora may need to be broken up before the urethral orifice is visible. The area around the urethra should be carefully cleansed with 1 per cent solution of lysol or with sterile water, and the opening of the urethra mopped dry with a sterile applicator, before the catheter is passed. In infants aged less than six months, the urethral opening is often hidden by a fold of mucous membrane extending forward from the hymen, seemingly to protect the urethra from contamination. In such cases the catheter is passed backward in the median line, and usually slips into the urethra, although not infrequently it passes into the vagina. It is always well to let a few cubic centimeters of urine pass before collecting the specimen, as the introduction of

the catheter may carry in bacteria from the urethra. In the male infant a large urethral catheter is used after careful washing of the glans. In catheterizing an infant, it is always well to drain the bladder completely, because when the child is lying on the back the pus settles to the bottom of the bladder and does not appear except in the last portion of the urine. In older boys the glans is carefully washed, and the urine caught in a sterile test tube as soon as a few cubic centimeters of urine have been passed.

For many years I have not been satisfied with a diagnosis of pyelitis unless it has been verified by a culture of the urine. The reasons for this are evident. The main reason is to be sure that an infection is actually present. The type of infecting organism has great bearing on the possibility of clearing up the infection. Even when large amounts of pus are present, the infection may be one that cannot be corrected by the usual modes of treatment, the best example of this being tuberculosis. I have seen such patients treated for long periods of time for simple pyuria. There are many conditions of the urinary tract complicated by pyelitis which cannot be cleared up by the ordinary medical means.

TREATMENT

The most important feature in the treatment of pyelitis is the giving of large amounts of fluid. As a rule, this is easily accomplished because of the high fever and consequent thirst of the infant or child. Whenever the infection is of the more toxic type there may be anorexia, refusal of all fluids, and vomiting when increase of intake of fluid is attempted. If the infant or child refuses to take fluid, it may be given by stomach tube or, with less effort, by nasal tube. The amount of fluid given in twenty-four hours should be at least 1000 c.c. and as much more as it is possible to give. As a rule, large amounts of fluid are best given in the form of 5 to 10 per cent solution of dextrose given, up to 10 gm. for each kilogram of body weight in twenty-four hours. More water is given if the infant or child will take it. Some infants and children refuse to take large amounts of water at any one time, but by giving a teaspoonful every five or ten minutes a considerable amount can be given in twenty-four hours. If vomiting, even after administration by stomach tube, makes it impossible to retain fluids by stomach, rectal administration should be tried. Physio-

logic solution of sodium chloride or solution of 7 per cent glucose is given to infants in amounts of from 60 to 100 c.c. high into the sigmoid at intervals of from two to three hours. It is well to hold the buttocks tightly together for from five to ten minutes to prevent expulsion. Older children frequently take fluids better by the Murphy drip, but irritation of the bowel frequently develops so that the solution is immediately passed. In this way from 0.5 to 1 liter can be given in twenty-four hours. If there is continued vomiting and loss of gastric juice, it is advisable to give physiologic solution of sodium chloride to prevent alkalosis. If fluids are not retained by rectum, the intraperitoneal route is best for giving large amounts of fluid. Seven per cent glucose can be given in 0.4 per cent solution of sodium chloride in amounts dependent on the size of the child. The injection is continued until the abdomen is rendered slightly tense. Amounts from 100 to 500 c.c. can be given at a single injection. The absorption is extremely rapid and re-injections can be given at intervals of from six to eight hours. In cases associated with considerable abdominal distention, it may be advisable to give the solution intramuscularly, subcutaneously, or in emergencies intravenously. If there is anuria, in spite of ample intake of fluid, it may be advisable to give 20 per cent dextrose or sucrose solution to produce diuresis. In the toxic cases it is important to watch for overfilling of the bladder and, if necessary, the infant should be catheterized.

In infancy, in particular, the general nutritional condition of the patient must be carefully watched and when one considers the large amounts of fluid it is important to administer, it is easily seen that food may be difficult to give in proper amounts. As soon as nausea and vomiting have disappeared, small amounts of breast milk, if possible, should be given. If this is not available albumin or lactic acid milk, beginning with about a third of the required amount of food and increasing up to about two-thirds, may be tried. High fever should be combated by tepid packs or, if these are not well tolerated, by the administration of 0.25 grains of pyramidon.

In acute cases, the alkaline treatment undoubtedly is of benefit. Sodium citrate and sodium bicarbonate are administered in increasing amounts until the urine becomes definitely alkaline. In some cases it takes extremely large doses to obtain this alkalization. In infants aged less than six months, it is usually well to

begin with 0.5 gm. of each four times a day and to increase by half of this dosage until the urine becomes alkaline. As soon as the urine is rendered alkaline, it is usually found that a much smaller amount of alkali will keep it so. I do not know what the effect of the alkali is on the infection. The beneficial effect is probably on the tissues rather than any bactericidal action on the organism. Not infrequently the temperature drops to normal following alkalization of the urine. Even when the temperature becomes normal the urinary data remain practically unchanged and it is necessary to continue with the alkali and large amounts of fluid.

After the fever has subsided, symptomatic recovery is usually rather rapid. It is at this point that the physician usually does not continue to follow up the treatment in the case and the patient is dismissed before it is definitely known whether the infection has disappeared. A certain number of cases unquestionably run a natural course to recovery and if the urine is examined again at a later date it is found to be sterile. On the other hand, a great number of cases unquestionably become chronic, for even though the pus has disappeared from the urine the infecting organism, which is usually the colon bacillus, persists in the urinary tract. I have definitely taken the position that no child with pyelitis should be dismissed from care until cultures of the urine, after discontinuation of medication, have shown that the infection has cleared up.

A simple method of determining sterility of the urine is to add a few drops of a catheterized specimen to a melted agar culture tube, mixing it by rolling the tube between the hands, letting the medium solidify and incubating it for twenty-four to forty-eight hours. If infection still remains, the agar will be diffusely filled with colonies; if the culture is sterile the agar will be transparent.

This cure, bacteriologically controlled, is often difficult by the use of alkalis and the forcing of fluids, and in cases that become chronic the use of methenamine has proved of most value. The type of organism causing the infection is of great importance in the prognosis. Infection by cocci usually yields to treatment more readily than infection by the colon bacillus. Cases 3 and 4 are illustrative.

CASE 3.—A boy, aged nine years, was brought to the clinic because of afternoon rise of temperature which had been present for about seven months. There had been periods of two or three weeks of freedom from fever. At times the fever had been

accompanied by diarrhea. During periods of fever he had not had any particular discomfort but a general feeling of lassitude.

Examination of the urine showed pus, graded 4, and occasional erythrocytes. The urine was negative for bacilli of tuberculosis. Roentgenogram of the kidneys, ureters, and bladder was negative. The output of phenolsulphonephthalein was 35 per cent. The blood urea was 16 mg. for each 100 c.c. Culture of the urine showed innumerable staphylococci. The patient was given methenamine but he had some difficulty in taking a large quantity of fluid. Three days later, cultures of the urine were negative. After two days the methenamine was discontinued because of hematuria and pain in the left side. Alkalies were administered for another week. During this time cultures of the urine continued to be negative.

Three years later the patient returned to the clinic. He had been well until three months previously when he had again shown symptoms of pyelitis. Treatment with methenamine, acriflavine, and hexylresorcinol had been ineffectual. At this visit the urine showed pus, graded 1, with innumerable staphylococci on culture. The output of phenolsulphonephthalein was 45 per cent. The blood urea was 26 mg. for each 100 c.c. Roentgenogram of the kidneys, ureters, and bladder showed spina bifida occulta. Methenamine and ammonium chloride, which were given, were tolerated fairly well. Culture two days later was negative. The medication was continued for seven days and three negative cultures were obtained after discontinuation of medication.

CASE 4.—A girl, aged eleven years, came to the clinic, because she had frequency of micturition accompanied by burning. The onset, six weeks previously, had been acute, with chills and fever. She had had pain and tenderness in the back and abdomen. There had been four definite attacks during this period of six weeks.

There was slight tenderness over both kidneys. The return of phenolsulphonephthalein was 80 per cent. The blood urea was 22 mg. for each 100 c.c. A catheterized specimen of urine did not show pus cells, but culture revealed innumerable green-producing streptococci. She was given 1 gm. of sodium citrate three times a day. At the end of five days the urine still contained innumerable streptococci on culture. The alkali was discontinued and 0.5 gm. of methenamine and 1 gm. of ammonium chloride were given four times a day. After one day this dosage was administered three times a day because of frequency of urination. At the end of three days, culture of the urine was sterile. After medication was discontinued four negative cultures were obtained.

Because methenamine acts only in an acid medium, it is necessary to render the urine sufficiently acid to produce a rapid splitting off of formaldehyde from the methenamine. It has been found that this is most easily accomplished by the administration of ammonium chloride or calcium chloride, which is given in amounts of about 1 gm. four times a day to children of the age of six or seven years. In cases in which

there is vomiting it may be necessary to reduce the dose. This amount is usually sufficient to give the urine a hydrogen-ion concentration of pH 5.5 to 5. In addition, 0.5 gm. of methenamine is given four times a day. I believe that it is important to get as high a concentration of formaldehyde in the urine as rapidly as possible.

It is not necessary to give methenamine over long periods of time in order to bring about sterilization of the urine. In fact, I believe that patients who are treated with methenamine should be given intensive doses over short periods of time. Certain individuals have an idiosyncrasy for methenamine so that it is always necessary to watch with particular care for the presence of hematuria during the first few days. This is not a contra-indication for treatment because the hematuria is a result of hemorrhage from the bladder and not of renal irritation. As soon as hematuria appears it is necessary to stop administration of methenamine temporarily and give large amounts of water, and again to administer alkalis. It has been my experience that in most cases of pyelitis uncomplicated by urinary anomalies, the urine can be sterilized by means of treatment by methenamine, and that by starting with a suitable dose and gradually increasing the amounts, rendering the urine acid to pH of from 5 to 5.5, it is possible to clear up most infections. In those cases in which hematuria develops regularly before the urine becomes sterile, it is, of course, impossible to clear up the infection, but this is an exception.

In my experience, those cases in which it is impossible to sterilize the urine are cases of in-

fection of the urinary tract complicated by urinary anomalies. Thus, as a result of the failure of the treatment, it is possible to discover those cases which require further investigation. The significance of this differentiation cannot be overemphasized, as it brings to the urologist and surgeon the group of patients that will eventually die because of loss of renal function if the infection is allowed to continue. This group was formerly considered very small, but by the work of a number of observers it has now been proved that such anomalies are present in at least 5 per cent of children. In the treatment of pyuria of infancy and childhood it is necessary to recognize this group at the earliest possible moment. This is only possible by selecting them from the large group of chronic urinary infections by the therapeutic test. Only when each physician is willing to take this responsibility and not dismiss as cured patients in whom he has not been able to clear up an infection will this be brought about. The group of cases in which the condition cannot be cleared up by treatment must be very carefully studied. The following examinations should be made: blood urea, return of phenolsulphonephthalein, roentgenogram of the kidneys, ureters, and bladder, cystogram, cystoscopic examination and pyelogram. In this way it may be possible to discover the true nature of the urinary anomaly. Close coöperation of pediatrician and urologist will undoubtedly save much valuable time in treatment in these cases and prevent much injury to the kidneys.

THE MANAGEMENT OF THE FIRST STAGE OF LABOR

By JOHN H. MOORE, M.D., F.A.C.S.

GRAND FORKS, NORTH DAKOTA

I have selected this subject because, too often, the very necessary "watchful expectancy" degenerates into a "masterful inactivity," with disastrous results to mother or babe or both.

At the onset of labor, the parturient should have as thorough a physical examination as time will permit. Unless one is crowded by the urgency of the case, pointing to the necessity for immediate action, he will do well to follow some orderly plan of examination. A suggested plan is as follows:

1. A minute study of the general appearance

of the parturient, including the frequency and character of the pains, her reaction to them, whether she has other suffering than the pain of labor, and the general state of her morale.

2. The abdominal examination.

3. The internal examination, rectal or vaginal.

4. The general physical examination.

Many of us are prone to slight the general appearance of the patient, not only at the time of our first visit to her in labor but, all too frequently, at subsequent visits. While taking

stock of the physical evidence of her labor, let us give thought to our patient's mental condition. The true obstetrician is one who "stands before" or "protects" his patient, mentally as well as physically. A reassuring word that her pain will be relieved and that throughout her labor her comfort and safety will be closely guarded is a promise we owe to the woman in labor. The fulfillment of that promise is one of the prime duties of our science and art.

The abdominal examination should answer the four questions of DeLee: (1) Is the uterine ovoid longitudinal or transverse? (2) What is over the inlet? (3) What is in the fundus? (4) Where is the back?

An intelligent search for the answers to these questions will, in most cases, give the diagnosis of presentation and position. In addition, this examination will discover abnormalities, intra- or extra-uterine, such as polyhydramnios or a distended bladder, if such exist. It should be followed by a careful auscultation of the fetal heart tones to determine the condition of the child in utero. Such auscultation should be made in the intervals between pains, and the rate should normally lie between 120 and 150 a minute. Any marked variation from these limits is indicative of danger to the child. Throughout the first stage the heart tones should be auscultated at intervals of not more than 30 minutes. I have long made it a practice to have the nurse observe the rate and character of the heart tones at regular intervals throughout the first stage, and have noted an increased interest on her part when she is called upon to perform this important duty.

The first internal examination made should be rectal. In about 60 per cent of my cases it is the only form of internal examination employed. Increased experience with it has enabled me to determine the condition of the cervix and the degree of dilatation of the os, the advancement of the head in the pelvis, together with its position, with a fair degree of accuracy. Breech labors, at times, cause me considerable confusion on rectal examination, and this is also true of such abnormalities as face presentations. In these cases, or in any case where the presentation and position are in doubt, I employ vaginal examinations.

For rectal examination the patient is placed on her left side, her right leg moderately flexed on her right thigh, and the right thigh, rather sharply on the abdomen. The hands should be washed and dried and a clean, dry rubber glove drawn on. The index finger of the right gloved

hand is coated with vaseline or KY lubricating jelly, and with great gentleness is introduced into the rectum. The spines of the ischia present valuable landmarks to be used in determining the degree of engagement. If difficulty is encountered in outlining the presenting part, it can be pressed down on the examining finger by the hand from the outside. The condition of the cervix and os are next determined. After the cervix is thinned and dilated, one can usually distinguish the cranial landmarks with sufficient accuracy to diagnose the position. Because of the reduced danger from infection and the painlessness of the rectal examination if gentleness is employed it may be repeated as often as necessary to follow the progress of the labor.

The vaginal examination should always be conducted by sight, the patient lying on her back, draped, and near the edge of the bed or across it. If the patient has not been previously prepared the pubic region should be shaved, the pudendal region scrubbed with soap and warm water, and then irrigated with a solution of 1:1500 bichloride of mercury or 1 per cent lysol solution. Care must be exercised that none of the soapy water, hair or detritus gains access to the vagina during these cleansing operations. Before making a vaginal examination I scrub my hands for five minutes with soap and running water and then in a 1 per cent lysol solution. A sterile glove is then drawn on. With the ungloved hand holding a bit of cotton or gauze soaked in 1 per cent lysol solution, the labia are separated and the gloved index and middle fingers are then introduced into the vagina from above to avoid contact with the anus.

Six points are determined by vaginal examination: 1. The degree of effacement and dilatation of the cervix. 2. The condition of the bag of waters. 3. The diagnosis of presentation and position. 4. The advancement of the presenting part along the birth canal. 5. Abnormalities. 6. The general size and shape of the pelvis.

The general physical examination of the patient should note her temperature and pulse, the condition of her heart and lungs, and her blood pressure. If time permits, her urine should be examined and her hemoglobin taken. We cannot obtain too much information about the patient's condition, any effort that may be expended to make that information detailed is well worth while.

The diet in the first stage of labor should be

liquid. The patient will refuse nourishment, but by quiet insistence, she can be induced to take liquids. This is imperative, particularly if the labor is protracted. The strain of the second and third stages of labor is not well borne by a weakened patient, and postpartum hemorrhage then becomes an even more formidable enemy.

At the onset of labor the lower bowel should be evacuated by a simple enema. This should be repeated every 12 hours during the first stage unless delivery seems imminent. In the latter event the enema should be withheld, for it is easier to prevent contamination of the operative field by formed particles of stool than by a flood of liquid feces.

The danger of a distended bladder during labor is a real one. It should be emptied every four hours during labor. Do not depend too much on the fact that the patient voids voluntarily, but use the catheter if there is any doubt that the bladder is thoroughly emptied.

The progress of the first stage of labor can be followed by abdominal and rectal examinations. An intelligent nurse makes an invaluable assistant and can readily be taught the essentials of the examinations. One should, however, check her findings from time to time. The possibility of such complications as eclampsia, abruptio placentæ, and rupture of the uterus should always be borne in mind, and the general condition of mother and child should be given thoughtful consideration throughout. The rupture of the membranes is the signal for a careful examination to determine the size of the cervical opening, a possible prolapse of the cord, or the proximity of the second stage.

It is our duty to relieve the pain of child-birth. We, as physicians, are prone to forget the exhaustion that, all too frequently, follows the ordeal of labor. Labor itself, to say nothing of the insufficient nourishment, the fear and dread, the loss of blood in the third stage, or the eventual obstetric operation is a sufficient tax on the vitality of any woman. It is not necessary to add to that already heavy burden the suffering of the first or any other stage of labor. We should study each labor with the thought in mind of reducing pain to the minimum, with safety to mother and babe. There is but one rule that need be followed in relieving the pain of child-birth: Give something for the relief of pain just as soon as the patient is uncomfortable, no matter how early in labor. Seminarcois with pantopon and scopolamine

is ideally suited to the primiparous patient or to the multipara with a protracted and painful first stage. In cases not adaptable to seminarcois, nitrous oxide-oxygen or ether, given intermittently with pains will make the first stage comfortable and can be carried through the second and third stages of labor. Rectal anesthesia in obstetrics is as practical for the physician in general practice as it is for the obstetrician in a well-equipped maternity. For the relief of pain in child-birth there are, therefore, several methods that give excellent results. Justice to the patient demands that the physician familiarize himself with the different methods and then select that method most adaptable to the case at hand.

Careful examination, careful supervision, and the relief of pain are duties that the physician should assume in the first stage of labor. If he assumes them early he will be rewarded by a smoother delivery and a more satisfactory puerperium.

MISCELLANY

THE STATE BOARD OF HEALTH AND ITS MAIL

By a Friendly Critic

This is one of the replies sent by a friendly critic in response to form letters received by him from the Secretary of his State Board of Health in search for information, obviously not obtainable but essential to the peace of mind of the Secretary and other present and future statisticians.

The fact that such information is not obtainable is sometimes due to a lack of diagnostic ability on the part of the physician or sometimes to the ability of an unwise man to ask questions which a wise man cannot answer.

The situation, often arising in the practice of every physician in both the city and the country, gives "The Friendly Critic" an opportunity to reveal the humor in the case.—THE EDITOR.

My dear Doctor:

I said the child died of marasmus. I do not know just what marasmus is, but, like charity, it covers a multitude of sins—especially the sin of ignorance. I want the Vital Statistics of your Board to mean something as well as you do, and therefore do my best to make a diagnosis. I often fail to make a diagnosis satisfactory to myself. Such a failure sent to you means nothing. I might, as you suggest in such cases, send you the history and let you make the diagnosis. God forbid that I should underrate your ability, but I do not see how you could make

a better diagnosis than the physician who has seen the case often, watched it, studied it, and treated it conscientiously: in such a case, you will pardon my saying it, I would consider your diagnosis as more than doubtful and the vital statistics injured rather than benefited thereby.

With the utmost care and the use of the most approved methods, some cases cannot be diagnosed. In all such cases, I am willing to give as the cause of death: "I DO NOT KNOW". But recently, we had a case of acute sickness here. A good physician was called, and he said it was appendicitis. Then a surgeon from a neighboring city was called, and he said it was pneumonia, and advised against operation. The child was sent to a city clinic and the parents were advised that no diagnosis could be made without an exploratory operation. The operation was performed and the child died upon the table, or within a few minutes afterward. The death certificate gave as the cause of death: horseshoe kidney. The operation evidently was a mere pastime to the moribund child.

Another case near here was seen by _____, and for a week or two he failed to make a diagnosis. I was called in consultation and could say nothing positive. She then went to a larger city where she died of bulbar paralysis, though she showed no signs of any paralysis when she left here. No postmortem was made and the diagnosis must remain questionable. Dr. Cabot, of Boston, has brought the uncertainty of diagnosis to the attention of the profession, and if the distinguished physicians and surgeons of the Massachusetts General Hospital make more than 33⅓ per cent of failures in their diagnosis as shown by the postmortems, after having the benefit of the most eminent consultation and the use of all the instruments of precision is it reasonable to presume that one can make a diagnosis of an obscure case from its history only? However, you may try, for here is the history of the case in question:

In March triplets were born to a mother who already had nine children; neither parent had the nor syphilis. One child had been a burden; three were a calamity.

The children having no names, I recorded them in the order of birth: La Primera, La Segunda, and El Tercero, for 1st, 2nd, and 3rd. The family was in very moderate circumstances and when the children were born it was still winter and the house was cold. The children weighed 3, 3¼ and 3¾ pounds, respectively. Good help could not be had. I sent for a nurse, but she took

sick and had to leave after a few days. The mother had no milk; advice how to feed was given and disregarded. All the old women tried their hands, and each one in a different way. Though the children wasted away by the day, no physician was called. Yes, one, an hour before La Primera died, I was called. She was a small bundle of skin and bone, nothing more. Just wasted away. She was two days in dying, her mother said. "Thus ends the first chapter".

The second is the same. Again, a few months later, I was called to see La Segunda. I came in time to close her eyes. It weighed less than when it was born, the skin looked like parchment, and the features were old and drawn. In both cases death brought relief to the parents, who, though not a word was said, seemed pleased at this natural solution of a dreaded burden. After the death of La Segunda I took charge of El Tercero. He is now improving. Do not be surprised if in the near future your attention shall again be called to him by a death certificate giving as the cause of death the awful word marasmus. You may call it infanticide by starvation, or death through neglect. You may be right.

Some day when the Keeper of the Great Seal opens the Book of All Wisdom, and grants you a view of all that ever was or shall be, then in this encyclopedic vision it may appear that you were mistaken in my diagnosis. It may even appear that you were mistaken in your diagnosis and that La Primera died of horseshoe kidney and La Segunda of bulbar paralysis.

Fraternally,

**OFFICIAL HEALTH PROGRAM OF THE
WOMEN'S AUXILIARY OF THE
AMERICAN MEDICAL
ASSOCIATION**

I. Public Hygiene

Fundamentals upon which Auxiliary work for improvement of public hygiene should be based:

- (1) Recognition of the fact that public health work is a highly technical job, requiring scientific, technically trained workers. That health work undertaken by laywomen with no knowledge of the public health problem as a whole is necessarily fragmentary and ineffective.
- (2) Recognition of the fact that every state, county and city is entitled to a scientific full-time health department (organized not to treat the sick, but to prevent disease and promote health), adequately financed, free from political domination, and providing continuity of service to a trained personnel so long as work is efficient.
- (3) Recognition of the fact that the first and most

fundamental job for lay organizations like the Auxiliary is to secure such scientific full-time health departments and adequate health protection, in their state, their county, their city or town.

- (4) Recognition of the fact that where efficient, full-time scientific health departments do not exist (and only about ten per cent of the rural districts of the United States have anything approaching adequate health protection), health activities must be initiated and carried on by volunteer unofficial agencies; but that all such work should be so planned and administered as to serve as stepping-stones toward the full-time official health department, and that when the full-time official health department, with workers trained for public health work, has become an accomplished fact, lay organizations should support and co-operate with the official workers and should be willing to take orders from them.
- (5) Recognition of the fact that no health department, state, county or city, can do effective work without intelligent co-operation of the public; that such public co-operation depends upon widespread health education; that lay organizations can do this educational work, and are needed for it; and that the Auxiliary can be one of the most valuable tools for an official health department to use in this work, because it can, by its education of the public concerning the official health department's work and needs, be the means of gradually eliminating or preventing political interference with an efficiently working department, and thus insure to it uninterrupted public service.

Most volunteer agencies do not yet realize the wastefulness of their individualistic efforts. One of the first things the Auxiliary should do is to work for a change of attitude in other volunteer women's organizations.

Health officials know that it is not always the work which makes the greatest emotional appeal to the public which most needs to be done. Unfortunately most women do not know this. This is something the doctors' wives might well undertake to teach other women.

The National Auxiliary recommends, therefore, that each State Auxiliary undertake, under the direction and with the help of the Public Health Committee of the State Medical Association and of its Advisory Council, a study first of all of the fundamental principles of health promotion and disease prevention; second, of the set-up considered essential by public health experts for an adequate budget, and the like; and third, of the state health conditions; that it devise means of acquainting all the state board members with the result, and that recommendations for education work by the county Auxiliaries be based upon the conditions found.

In states where all is well and where time has developed good official health machinery and good health conditions, general knowledge of the fact will tend to prevent interruption of the excellent work, and will be a source of satisfaction to the women of the state.

In those states where there is much yet to be done, this investigation will indicate what sort of work needs doing first. For example:

- (a) In those states which are not in the Birth Registration Area, the Auxiliaries would, without doubt, wish to tackle, as their first job, the ninety per cent birth registration problem.
- (b) In those states in which the state health department believes the "County Health Unit" to be the solution of the rural health problem, the county Auxiliaries should be encouraged to take as their chief work such persistent and widespread education of the public as will gradually create a general demand for the full-time county health department.
- (c) In those states where the rural health work is directly done "long distance" by the state health department, the county Auxiliaries, if willing to work, and work under the directions of the state health department, can carry on intensive local health education work which would be impossible for the state department without intelligent local co-operation.

To those Auxiliaries which agree with these ideas the committee recommends the following outline of study:

- (1) Vital Statistics, their value.
Compare the vital statistics of the state with those of other states.
Compare the vital statistics of the different counties of the state.
Compare the vital statistics of the cities with other cities in the state, and in the United States.
- (2) The State Health Department; its organization and program:
(a) For general state work.
(b) For co-operating with the counties in improving county health conditions.
- (3) The value of the Public Health Nurse.
- (4) The County Health Unit as a possible solution of the rural health problem.

Community-wide Conditions Which Affect Health

- (5) Milk:
Milk standards, why necessary, what milk standards your community needs. How are these needs being met?
- (6) Housing:
Your community housing laws:
Housing conditions as they have developed under these laws and as they affect health.
Improvements needed.
- (7) General sanitation and its relation to the death and morbidity rates.
Sewage disposal.
Water.
Garbage.
Flies.
Dust and street cleaning, etc.

II. Personal Hygiene

The improvement of personal hygiene in any community is almost entirely a matter of education. Here, again, the Auxiliary members must first educate themselves before they can take a safe part in educating the public. The committee, therefore, recommends that the Auxiliary study programs shall include such subjects as:

(Continued on page 141)

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations
The Hennepin County Medical Society
The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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THE WAY OF THE REFORMER

We print below a brief quotation from an article by Lawrence S. Morris, entitled "Upton Sinclair—The Way of the Reformer," in the *New Republic* for March 7. The quotation carries its own point, but by printing it we must call attention to the article itself. Although the article has to do with the work of one man, it sets forth in the clearest way the fundamental mistakes made by "reformers" in general. A change in the social order will begin to be possible when men generally are able to view life as Mr. Morris views the work of Upton Sinclair.

—THE EDITOR.

" . . . An idealistic reformer may protest against being compared with an army sergeant; but, though their aims are on different levels, their means are much alike, since both are sculptors working in human material, with a visioned model in their minds. And if either is seduced by his eagerness into ignoring the limitations of his material, he is like a sculptor trying to shape granite with his thumb.

"This is why one expects a serious reformer to have at least a working knowledge of men and women as they are, before setting out to change them. Everybody knows that from his conception of God to his taking of a wife, a man is a knotted skein of prejudices. And a reformer's success will ultimately depend on his ability in drawing out those that best suit his purpose. Modern psychology has only rediscovered

what story-tellers have always known, that every man is a hypocrite in the presence of his own soul. He sweats to achieve goals which he hides from himself and occasionally succeeds in hiding from others. He has the appearance of a rational being, yet any politician knows the futility of trying to move him by reason. In fact, he is most open to suspicion when he is most convinced that he is acting on principle. And it is this chameleon creature the reformer is boldly engaging to remold.

" . . . Any sensible person would think it impertinent to start repairing an engine until he understood what was wrong. And if he were a part of the engine, he would begin by discovering his own bias. The reformer, being a part of society, must begin by shedding the prejudices bred in him by his own time and place. For only when he has emptied his mind of what his contemporaries and neighbors take for axioms, will he be able to examine human nature realistically."

PHYSICAL EXERCISE

This review of a recent article in the *American* for January, 1930, describes one of the most famous exponents of exercise in the world and the good he has done for humanity by his direction of proper exercise and his ideas on diet. It was with great joy that we opened this magazine and saw a picture of William Muldoon, who criticizes the craze for diet and exercise which he describes as "*wonderful bunk!*"

The editor read this study of Mr. Muldoon, written by Jerome Beatty, with a great deal of pleasure because years ago when he was a comparatively young man he went on to Muldoon's and liked it so much he went on again a year later and there he had the time of his life learning to obey instructions which were given with a free hand. Mr. Muldoon was a man of dignity and bearing, but when he expressed his opinion or asserted what he wanted done it was done quickly, such is the character of the man. If a man did not like the breakfast presented to him in the general dining room of the sanitarium, or what is referred to now as Olympia, at White Plains, New York, he was told to go without any food until the next meal,—thus teaching him to eat what was set before him and impressing on his mind the actual fact that diet was sometimes "*wonderful bunk.*"

It seems that many years ago, when Muldoon first started out, he was employed in training soldiers in the army and he was so successful in the work that he eventually opened a sani-

tarium for the conditioning of men. Although his rules were strict, and in the military manner, everything was run smoothly and in the interest of the patient. To the best of the writer's recollection, when he first took a patient to Muldoon's who was not in very good condition, we both had to learn something of obeying instructions and not complaining about quarters or conditions—and there was really no reason for complaint. Every man of us was obliged to be up at six o'clock and if we did not get out of the room and down to the gymnasium or dressing room soon enough Mr. Muldoon was on the floor telling us what he thought of us and otherwise ordering us to be down in the dressing room promptly. Very little time was allowed for a man to dress, as he was supposed to be on the floor of the exercise room, which would accommodate 40 or 50 men and wide enough to allow the men to demonstrate their ability with a basket ball or medicine ball. We very soon learned that 50 minutes of definite and active exercise was really fun. After the 50 minutes were up we ran around the room two or three times and then into the bathroom where every man took a shower under Mr. Muldoon's directions. By that time it was nearly breakfast time and most of us were ready for a good breakfast at 7:30 A. M. From 8:00 A. M., to 9:30 A. M., we were allowed to visit and do other things necessary for a man who was being conditioned. Then we were requested to meet outside, where the horses were ready and saddled. If we did not care to ride horseback (and the editor confesses freely that he was not in good condition for horseback riding) we were permitted to walk for nine miles, which brought us back there at twelve o'clock noon. They had the road so mapped out and laid out that there was no difficulty in finding our way about. By the time we got back to the sanitarium we were wringing wet and again were required to take a shower bath and a good rubdown—self applied. We were not permitted to have a man do this for us but were obliged to do it ourselves, which was much more proper and convenient. After luncheon, at one o'clock, we had a period of rest for part of the afternoon and at four o'clock we were all sent out on a stroll, and to those who have been there one of Mr. Muldoon's strolls is something of a walk.

Supper was at an early hour, and after supper until nine o'clock we were permitted to roam through the house or sit in the lounging room and talk or read, as we pleased. But we got to bed early. All the men were supposed to be

in bed at nine o'clock, with the lights out, and we were obliged to sleep whether we could or not.

All who know of Mr. Muldoon recall that he was the trainer of some of the greatest prize fighters that ever existed. He had a way of developing them and bringing out what was in them.

Mr. Muldoon makes no appointments for tomorrow. If he can see you today he says so and if not he says "call me tomorrow and we will see then." His motto is, "Live for today, forget yesterday, and don't anticipate tomorrow."

The article goes on to say that Mr. Muldoon looks amazingly well although at this time he is eighty-four years old. He exemplifies what a man can do who takes care of himself, who gets food that is suitable for him (and the food at Olympia was always good) and exercise and bathing and regularity of the entire household.

The editor recalls one man there who had been brought up from New York and who had been bedridden for two years. He was, of course, a chronic invalid and yet Mr. Muldoon dared to take him up to his place at White Plains and take charge of him. By the end of the second day he had him out on the porch in the sunshine, feeding him milk, and by the end of the fourth day he introduced him to the gymnasium room and mildly played a little light ball with him. In eight weeks this man had recovered and was well enough to return to his home in New York—an accomplishment which was certainly delightful for the family and for the man himself.

Patients are not permitted to smoke even a cigarette on the premises, which does them no harm, and no one is permitted to drink while there. So that in all Mr. Muldoon's ways he has a great sense of form and the fitness of things, and what is really necessary for clean living.

(Continued from page 139)

Health Promotion:

Prenatal care.

Child Welfare—infant and pre-school hygiene.

School hygiene.

Mental hygiene.

Social hygiene.

The advantage to the public of general compliance with health regulations.

The periodic health examinations.

Control of communicable diseases.

The entire program should close with a survey of all the private agencies doing health work in the community, and a discussion of the possibility and desirability of centering the direction of all such work in a full-time, scientific health department,

under which the private agencies, while still maintaining their identity, would work in complete co-operation.

NEWS ITEMS

Dr. Francis M. Prettyman, of Northfield, Minn., died February 13, at the age of 80 years.

Dr. F. L. Ready, Minneapolis, has moved to Hartington, Neb., where he will continue in general practice.

Dr. T. P. Martin, Gary, S. D., has recently moved to Arlington, Minn., where he will resume general practice.

Dr. Arnold Larson, who has been in active practice for many years at Duluth, has moved to Detroit Lakes, Minn.

Dr. John H. Rishmiller, Chief Surgeon of the Soo Railway, has recently returned from a month's vacation in Florida.

Dr. F. L. Mitchell, Newell, S. D., has recently moved to McLaughlin, S. D., where he has opened offices for general practice.

The monthly meeting of the Huron Medical Society, Huron, S. D., was held March 13. General splendid talks were given.

Dr. B. T. Green, Brookings, S. D., was elected president of the district medical association at their meeting held February 25.

Dr. D. A. Gregory, Miller, S. D., has sold his interest in the firm of Hagin & Gregory, to Dr. J. C. Hagin and has located at Milbank, S. D.

In honor of his 10 years of service as City Health Commissioner, a dinner was given for Dr. F. E. Harrington in Minneapolis, February 28.

Dr. George M. Bristow, of Princeton, Minn., has retired as physician there. Dr. Bristow just rounded out fifty-three years of service in the profession.

Dr. A. T. Floew, who has been a practicing physician in Harvey, N. D., for the last 16 years, sold his practice to Dr. J. J. Seibel and Dr. A. F. Hammargren.

Dr. Willard Edwards, who has practiced in St. Paul for the past year in association with Dr. H. R. Tregilgas, left March 1, to establish his practice in Chicago.

Dr. Albert E. Flagstad, of Minneapolis, was appointed as deputy coroner by Coroner Gilbert A. Seashore. Dr. Flagstad replaces Dr. W. F. Widen, who has resigned.

Dr. Arthur C. Strachauer, of Minneapolis, recently attended a meeting of the board of directors of the American Society for the Control of Cancer in New York City.

Medical books valued at more than \$1,000 have been contributed to the student library in Millard Hall at the University of Minnesota, by Dr. J. F. McClendon, of the medical school.

Dr. C. S. Knox, pioneer physician of Superior, Wis., died February 27, at the age of 73. Dr. Knox was a graduate of Rush Medical College of Chicago, and came to Superior 30 years ago.

An interesting technical paper was read by Dr. A. F. Peterson, pathologist at the Murray Hospital, of Montana, before the semi-monthly session of the Silver Bow Medical Society of Montana, February 24.

Dr. George Holmes, clinician with the Hennepin County Tuberculosis Association since 1926, left for Washington, D. C., where he will be associated permanently with the internal medicine staff of St. Elizabeth's Hospital.

Dr. Peter Theodore Torkelson, a physician of Lyle, Minn., died on February 18, in Albert Lea, Minn. He was 49 years old at the time of his death, and was a graduate from the University of Illinois Medical College in 1908.

Dr. A. M. Snell, of the Mayo Clinic and Mayo Foundation, left February 23 for the Pacific Coast, where he addressed the medical meetings in Walla Walla, Spokane, Seattle, Tacoma and Portland. He is expected to return about March 15.

At the annual meeting of the Kandiyohi-Swift County, Minn., Medical Association, Dr. F. W. Behmler, of Appleton, was named president. Dr. G. M. Frederickson, of Lake Lillian, is vice president and Dr. C. L. Scofield, of Benson, is secretary-treasurer.

Dr. Alvin Sach-Rowitz who recently went to McGregor, Minn., from Kansas City, has purchased the hospital there which was established several years ago by Dr. Chas. Granger. The institution will hereafter be known as the McGregor Hospital and Clinic.

Dr. Jay A. Myers, chief of staff of the Lymanhurst School for Tubercular Children, gave a discussion of childhood and infant tuberculosis before the Iowa State Sanatorium commission and the Iowa Tuberculosis Association meeting held in Sioux City, Iowa, recently.

Dr. Stuart J. McCormick, of Chicago, and

formerly of Yankton, S. D., was very much of a hero in the recent and tragic train wreck at Kenosha, Wis., in which eleven persons were killed. Dr. McCormick rendered invaluable aid to those injured in the wreck.

Impressive funeral services were conducted on February 24, in Dillon, Montana, for Dr. Maurice A. Walker, a prominent physician who died at Butte, Mont., very suddenly. Dr. Walker was 66 years old at the time of his death. He was graduated from a Massachusetts Medical College in 1891.

The Hennepin County Public Health Association have announced a change in the name of their organization. Their organization will hereafter be known as the Health Council of the City of Minneapolis and County of Hennepin. This was announced by Dr. R. O. Beard, executive secretary of the council.

Dr. E. T. Sanderson, of Minneota, Minn., was in Chicago recently attending a session of the executive secretaries of State Medical Boards from all the states in the Union. Dr. Sanderson was named by the governor and the Medical Association to be representative of the Minnesota State Board at this important meeting.

The Dental and Medical Meeting of the Sioux Falls District Medical Society, Sioux Falls, S. D., was held Tuesday, March 4. There were two speakers for the occasion. Dr. Boyd Gardner, Head of the Dental Section, and Dr. S. P. Hench who has charge of the rheumatic cases at the Mayo Clinic. They gave a symposium on Foci of Infection and Rheumatism.

Dr. Hugh Cabot, who has been professor of surgery in the University of Michigan since 1919 and dean of its medical school since 1921, has accepted a position as senior consultant in surgery in the Mayo Clinic, it was announced at Rochester, March 4. Dr. Cabot formerly had been professor of surgery at Harvard University. He expects to assume the position there June 1.

Dr. George W. Corner, Professor of Anatomy at the University of Rochester, N. Y., gave an illustrated lecture on "The Rise and Practice of Medicine at Salerno" in the Anatomy Building at the University of Minnesota on March 10. Dr. Corner based his lecture on a visit to Salerno, Italy, which was the most important seat of medical learning in Europe during the Middle Ages.

At a recent meeting of the Sixth District Medical Society of N. D., held at Bismarck, the fol-

lowing officers were elected: President, Dr. C. W. Schoregge; vice-president, Dr. O. T. Benson; secretary-treasurer, Dr. W. L. Diven; delegate, Dr. C. E. Stackhouse; alternate, Dr. H. A. Brandes; censors, Drs. E. E. Hamilton, A. M. Fisher, F. F. Vonnegut. This unit appears to be in a thriving, wide awake condition, with an active membership of fifty and upwards.

At a meeting of the Sheyenne Valley Medical Society, held at Valley City, N. D., on the evening of February 28, 1930, the following officers were elected for the ensuing year: President, Dr. E. A. Pray; vice-president, Dr. C. J. Meredith; secretary-treasurer, Dr. Will H. Moore; delegate to the State Convention, Dr. E. A. Pray; alternate, Dr. S. A. Zimmerman; censor, Dr. A. C. MacDonald. After the business session a very interesting and instructive paper was given by Dr. W. H. Long, of Fargo, N. D., entitled "Cerebro-Spinal Fever, Infantile Paralysis, The Bulbar Type, and Epidemic Encephalitis."

Doctor Willhite Deals with Problem of Feeble-Minded

Superintendent of Schools for Feeble-minded gives talk at weekly club session.

Dr. F. V. Willhite, Supt. of the School for the Feeble-minded at Redfield, was the principal speaker at the regular meeting and luncheon of the local Lions club. His address was a discussion of the problems confronting the states and the nation brought about by the rapidly increasing mentally deficient of the country.

Dr. Willhite told of the rapid progress that had been made by science during recent years in adapting the various degrees of mental deficiency suffered by a large cross section of the American population.

Stressing the seriousness of the situation, the speaker stated that 1½ per cent of these defectives were school children, 36 per cent were paupers, 20 per cent were criminals and 17 per cent were orphans, he stated further that 1½ per cent of the American population is mentally defective.

Explaining the dividing lines between various defectives, the physician stated that the moron was practically normal until a certain age, usually about ten years, when "arrested development" took place and the mentality of the individual afflicted ceased to grow. This would be unmistakably manifested in school children as they were from then on unable to pass their grades.

There were two general types of these unfortunates, Dr. Willhite stated—hereditary and accidental types. The former inheriting their affliction, and the others being caused from severe illnesses, stunting of certain cells or glands, or similar misfortunes that rendered the patient unable to compete with normal people.

Dr. Willhite stated that the ultimate remedies for the appalling increase in this class of unfortunates

was segregation, sterilization, and strict anti-marriage laws. The immediate remedy which would help, he said, was the appointment of a commission clothed with authority and equipped with money to carry out an exhaustive survey of the situation all over the nation whose duties would be to see that the laws of segregation were strictly enforced. The time will come, he declared in effect, when it will be impossible for schools for the feeble-minded of the country to accommodate the inmates. In fact, he quoted statistics showing that there were now a million feeble-minded people in the United States, a large percentage of whom were in the child-bearing age, and that these were rapidly reproducing their kind and filling the institutions of the country.

Langford, S. D.

This type of information based upon careful study and observation by a man qualified to make scientific deduction relative to the problems confronting the state and nation in the care of these unfortunates is timely. The medical profession of the state should be advised from time to time so that they may be able to intelligently co-operate with those having the care and guidance of these unfortunates. The institutions do not have capacity to house and care for all our feeble-minded. There are cases scattered in each county in the state in need of such hospitalization. During such hospitalization such treatment may be given as will enable a percentage to be returned to their respective communities, with an increased value in our economic problems rather than a liability.

Office of Secretary of State Med. Ass.
J. F. D. COOK, M.D.
Secretary

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A man to do general practice of medicine and some surgery for May, June and July, in South Dakota town. Recent graduate preferred. Liberal offer. Address 698, care of this office.

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Laboratory technician would like to locate in Minneapolis or Montana or Dakotas. Can do general laboratory work, blood counts, blood chemistry, cultures and smears, basal metabolism, electric cardiogram, tissue work, and Kahn tests. Free to locate after March 15. Address 693, care of this office.

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CARDINAL POINTS OF IMPORTANCE IN EVERYDAY OBSTETRICS*

BY R. T. LAVAKE, M.D., F.A.C.S.

MINNEAPOLIS, MINNESOTA

Statistics show that puerperal sepsis is still the most important problem in obstetrics. It is the likely cause of approximately 50 per cent of obstetric deaths. We have at our command, I believe, enough prophylactic knowledge to reduce this mortality to a marked degree were this knowledge used.

The first step in the problem is the proper antepartum care of the mother, to the end that her resistance to all infection shall be as high as possible, and to the end, that during the trauma with laceration, minute or otherwise, incident to labor, no infection is circulating in the blood, due to focal infection (teeth, tonsils, etc.), and that no pyogenic bacteria are likely to be present in the birth canal.

The most simple practical test of likely potential resistance is the hemoglobin and red cell count. I find that a febrile postpartum course is most frequent in anemia cases. It is interesting to note that in a study of 8,000 obstetric cases, Adair and Tiber found that only 9.3 per cent of the febrile cases were found in the 13.7 per cent who gave a history of having had scarlet fever. This suggests that an immunity can be acquired to the streptococcus group. The Dick test may prove of value in choosing those susceptible, and serologic therapy suggests itself for the future although at present it has not brought very encouraging results. We should all look for the possible immunization against

the streptococcus. As regards having the birth canal free from pathogenic organisms, Kroenig and Williams have shown experimentally that the vagina may be considered sterile, so far as virulent pyogenic organisms are concerned, if nothing has entered the vagina for three or four days prior to delivery. This indicates the advisability of great care in instructing the expectant mother against intercourse, douching, and manual examination by herself or attendant for an arbitrary period of six weeks prior to expected delivery. Long enough to provide for possible premature labor. If pelvic examinations are necessary during the last six weeks, use rectal examinations. Infringements of prenatal instructions in these regards account, I feel certain, for many cases of sepsis following normal deliveries where no operative interference for delivery or repair was necessary and no slips in aseptic labor technic could be noted.

During labor we should continue our endeavor to support resistance to infection by proper rest, food, mitigation of pain, prevention of undue trauma and abnormal loss of blood. Abnormal loss of blood is most likely to occur in the third stage of labor and early puerperium, generally due to attempts to express the placenta before it has completely separated, and not giving sufficient attention to the contraction of the uterus in the first few hours following the birth of the placenta. The uterus should be contracted down by pituitrin and ergot and held for one hour.

To diminish the chance of introducing infec-

*Read at a noon meeting of the Ramsey County Medical Society, January 22, 1930.

tion during labor, abdominal and rectal examination should be used for purposes of diagnosis and following the progress of labor, the vaginal examination, under the most rigid aseptic technic, being used only when the abdominal and rectal examination leave one in doubt. The most comprehensive statistics concerning the relative danger of the vaginal and rectal examination show the vaginal examination, even under the most rigid aseptic technic, to be nearly three times as dangerous as the rectal examination.

The most common cause of infection today is, likely, meddling interference, namely, unnecessary vaginal examinations, unnecessary episiotomies, forceps, versions, and Cesarean sections. Meddling interference is the antithesis of conservative obstetrics. Conservative obstetrics aims to avoid any unnecessary interference but implies the greatest acumen in recognizing at the earliest possible moment the symptoms and signs calling for interference in the interests of mother and child.

The question of the hospitalization of obstetric cases is a very important one. All cases are more safe in a hospital, provided its technic is perfect and provided that it is physically arranged so that no indirect contacts can exist between clean and infected cases. This means the most exacting regulation of general hospitals where nurses, interns, and visiting attendants may carry infection. The most thorough bacteriological study of the sepsis epidemic at Sloane Hospital for Women by B. P. Watson and his associates showed the nose and throats of attendants as the most likely source of infection. Attendants should be masked as in surgical operations.

Treatment is supportive. Surgical only for drainage of pus collections. Transfusions for anemia are a great aid. It suggests itself that it may be well to choose our donors when possible from those who show a relative immunity to the streptococcus by the Dick test.

The toxemias of pregnancy are the second most important factor in mortality.

The cardinal points in the treatment of early toxemia are: hydration, high carbohydrate diet (glucose by proctoclysis or intravenously if necessary) high bromides to reduce the excitability of the nervous system and the recognition at the earliest possible moment of the signs indicating the necessity for emptying the uterus. These signs are increasing acceleration of the pulse and the mental condition. An accelerating pulse

over 120, unless due to marked dehydration or acidosis, that can be restored within 24 hours, to my mind, indicates the advisability of emptying the uterus. Any change in mental condition points the same way. It means a profound change that does not brook delay. Malingering, these days, is well nigh impossible when observation can be close and multiple consultations available in every town; and why we should take chances in borderline cases, I can not see. The next pregnancy may be very normal. The developing fertilized ovum is a parasite and sometimes a certain ovum is so toxic to a woman that nothing short of the quick removal of the products of conception will save her life.

The cardinal point in the prevention of pre-eclamptic toxemia is careful prenatal care: a careful supervision of diet and elimination and the eradication of all foci of infection. Pre-eclamptic toxemia in the vast majority of instances follows some form of infection, either focal infection in teeth, tonsils, sinuses, etc., or following so-called colds, influenza, etc. It follows, in my opinion, because of changes brought about in the placenta by the infection. All types of infection should put one on guard against pre-eclamptic toxemia. The consideration of the part played by infection has, I believe, appreciably reduced the prevalence of toxemia, in my observation at least. Careful prenatal care with frequent examination of urine and blood pressure, has diagnosed its accession so early that properly directed treatment has again reduced its more terrible results.

The treatment of severe pre-eclamptic toxemia and eclampsia is largely eliminative and sedative. All are acquainted with the two types of treatment; the Stroganoff treatment; and induction of labor under definite indications plus the sedative treatment as an adjuvant. Many of us advocate the latter because we feel that it results in a higher percentage of live babies and mothers. Sepsis and the toxemias account for approximately 75 per cent of all obstetric deaths. This leaves 25 per cent to be accounted for; 15 per cent are caused by the hemorrhage group

1. Abortion.
2. Accidental hemorrhage.
3. Ectopic pregnancy.
4. Placenta previa.
5. Rupture of the uterus.
6. Postpartum hemorrhage.

The remaining 10 per cent are distributed among tuberculosis, heart disease, diabetes,

embolus, and intercurrent general infections such as pneumonia, etc. Naturally, these figures vary according to epidemiological conditions. Let us not take up these minor groups except through general discussion later, if time permits.

The four important technical maneuvers that are of prime interest to all are:

1. Episiotomy and repair.
Repair of perineal laceration.
2. Forceps.
3. Version.
4. Cesarean section.

It is the abuse of these obstetrical operations that accounts, in a large measure, for the high morbidity and mortality rates in the United States.

Episiotomy with some has become almost a routine. Many of us advocate it only to fulfill definite indications, as follows:

1. When one is sure that he cannot avoid a bad laceration (one here substitutes a clean cut for a jagged crushed area).
2. To prevent the rapid giving away of an old scar, possibly leading to the rectum.
3. To relieve pressure from the descending head.

As a general rule one can prognosticate quite accurately, whether or not an episiotomy will be necessary. The mature vulva with large labia minora and a well marked fourchette, seldom tears or needs an episiotomy. The exception to this is generally caused by an acute subpubic arch which forces the head back toward the rectum, and places unusual strain on the posterior structure of the pelvic floor.

Although infection of an episiotomy is rare, no one can say that it is as safe as no open wound. Again, avoid a scar if possible, because of possible discomfort in the scar later. Many an episiotomy can be avoided by ironing out the perineum. Before repairing an episiotomy, or a laceration, change gloves if you suspect a slip in aseptic technic during delivery.

When it comes to the indication for the use of forceps, few men will agree.

They may agree as to the A, B, C's of forceps application:

- "A" standing for amnion, anesthesia, and application (position and relative size of head and pelvis).
- "B" standing for empty bladder and bowel.
- "C" standing for potentially complete dilatation of the cervix and attention to the cord.

Few agree as to the danger of forceps as a method of introducing infection, or as a means of injuring the child. In some clinics, low forceps is used almost routinely, to lift the head out of the pelvis. It is called prophylactic forceps. With due recognition that perfect technic lowers the risk of infection and injury, I still believe that forceps should not be used to hasten labor, except upon a valid indication, on the part of mother and child. The maternal and fetal circulation will give some of these indications; the length of the second stage, without advance, another indication; and pressure signs, the remainder. Whatever our views as to final indications, success will depend largely upon asepsis, fulfillment of the A, B, C's of forceps application, careful diagnosis of position, and gentle application and gentle traction.

To my mind the high forceps operation, should never be performed unless it is a necessity.

With the average operator, Cragin's teachings hold today, as they did twenty years ago, as regards the expectation of infant mortality and forceps:

- Low 10 per cent.
- Medium 20 per cent.
- High 40 per cent.

Literature, for the past few years, has been replete with articles emanating from men who believe that most women should be delivered by version, some men using it in 83 per cent of their cases. I cannot share this belief that it should be substituted for normal labor or even substituted for uncomplicated low and mid-forceps delivery. It is such a wonderful maneuver, however, that I try to conduct every case so that version may not be contra-indicated if deemed necessary.

The A, B, C's of version are similar to the A, B, C's of forceps application, with the addition of the condition that sufficient amniotic fluid must be present and the uterus sufficiently relaxed to allow of the maneuver without danger of rupture.

To my mind, there is no justification for advocating the use of version, or any other operative procedure, where labor can be terminated normally without undue fatigue to the patient and the child is in good condition. I am positive, in my own mind, that it is this operative furore that largely accounts for our high morbidity and mortality.

We now come to the consideration of Cesarean section; a subject of interest to every surgeon.

On no subject do men differ more radically as regards indications demanding its use. Statistics vary from 1 in 12 patients to 1 in 650 patients.

We all know that the maternal mortality, following the classical Cesarean, runs from 1.6 per cent to 27 per cent; 1.6 per cent if done before labor; 1.8 per cent if done within 6 hours after the beginning of labor; 10 per cent late in labor; and 14 to 27 per cent after vaginal manipulation and instrumental interference.

The low cervical Cesarean shows a marked reduction in mortality. Statistics on this point are not yet conclusive, as at present only the most expert operators are doing it to any great extent.

The low Cesarean has the great advantage, that it permits and really demands for its easy accomplishment, a good test of labor. This is a great advantage, as in 75 per cent of borderline pelvises, a test of labor will result in delivery from below, with or without the aid of forceps or version.

I am convinced that Cesarean section should be used only upon the most strict indications. If in doubt, always give a test of labor. Consideration of Cesarean section should impress the following obligation:

1. The obligation to measure every pelvis carefully, especially the pelvis of primiparæ and those giving histories of previous difficult or disastrous labors.

2. The obligation to examine for any tumor obstruction in every case so that if a Cesarean is definitely indicated or proves to be indicated after a trial of labor, all preparation can be made for its performance before the condition of mother and child contra-indicates its use.

3. The obligation to so conduct our prenatal care and our examination in labor that if Cesarean need be resorted to, it can be undertaken

without the fear of infection previously introduced. This emphasizes the importance of the rectal examination.

4. The obligation to remember that unless the keenest selective judgment is used in choosing cases for Cesarean section the maternal mortality will be higher than in the use of other accepted methods of delivery.

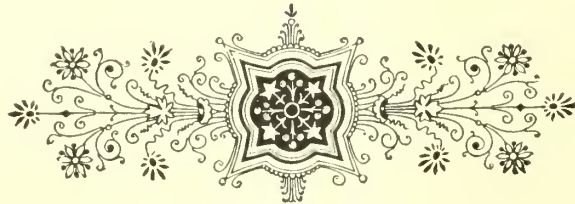
The great disadvantages of the Cesarean, aside from its primary morbidity and mortality rates, are the possibility of rupture of the uterus, even before labor, in the next pregnancy; and the effect on the patient, when she is considered so abnormal as to demand a Cesarean.

If we are ever going to reduce our maternal mortality in this country, we must improve our prenatal care; carry out more carefully the prevention of contact infection; improve our aseptic technic, and try to discourage meddling interference.

From another very important standpoint, I believe in making pregnancies and delivery as normal as possible. It results in less frequent disturbance of family sexual life. Women do not, so frequently, have a morbid dread of the possibility of pregnancy. In my observation, the disturbance of sexual relations is the cause of 95 per cent of all marital difficulties. This, of course, is not due entirely to the fear of pregnancy after operative deliveries; but the latter is an important factor in too many cases.

Before closing this quick review, let me stress the immense importance of focal infection in pregnancy. The eradication of focal infection, whether in teeth, tonsils, sinuses or elsewhere, is a great prophylactic measure against abortion, postpartum phlebitis, pre-eclamptic toxemia, and accidental hemorrhage.

These conditions are, in most instances, merely manifestations of the continuous war between certain bacteria and man.



CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—25—1022.

Woman, 41. Scarlet fever at 12, rather severe attack; measles in childhood; typhoid at 4; inflammatory rheumatism at 18; knees and ankles swollen; in bed 2 weeks at this time; no recurrence. Did not recall shortness of breath afterwards. Lived a very active life. Ran up and down stairs 30 or 40 times a day and never felt any discomfort. One year before her present illness began, her husband noticed that he could hear her heart beats at night in bed. In November, 1924, after taking a walk, she had an attack of asthma which lasted about a half hour and was associated with precordial distress and palpitation. No edema. This asthma was relieved by rest. One month later there was another severe attack of the same kind. She described the heart action as jumping and there was gas in the abdomen. She had repeated attacks of this kind from this time on. In one attack she recalled severe vomiting. She went to a hospital in January, 1925, and stayed for six weeks. At this time she had moderate orthopnea; often felt the heart beating rapidly. Walking across the room would cause palpitation. Digitalis treatment.

Admitted about December 1, 1925. Stated that on November 23 there was a feeling of distress in the stomach, preceding the heart attack. She began to vomit blood. Physical examination; moderate cyanosis; pulsating veins in the neck; respirations 20; pulse 120 and absolutely irregular. Blood pressure 140/90 to 120/90. Moderate cyanosis of the cheeks, lips, tongue, fingers and feet. Auricular fibrillation. Slight atrophy of the fingers and clubbing of the nails. Diffuse apex beat. Definite heaving at the lower end of the sternum. First tone sharp. P₂ accentuated. No murmurs at any time. Apical pulse 180, absolutely irregular. At one examination apex rate 150, radial 82. No râles at the bases. Sputum streaked with blood. Liver margin tender and 2 cm. below the costal arch. No edema of the legs.

December 11 there was hyperresonance with râles and friction rub on the right side in the axillary line over the lower part of the lung. At this time there was cough with bloody sputum and a rise of temperature. She responded to digitalis therapy. On the day before death apical rate 70, radial rate 69. She died during sleep. The nurse noticed her

take a few gasps before she expired. Two blood cultures were negative.

Leucocyte count normal on admission. December 11, 18,900 leucocytes; 91 per cent polymorphonuclears; 9 per cent small lymphocytes. December 15, 18,000 leucocytes; 80 per cent polymorphonuclears. Urine: albumin +, hyaline casts, red cells. Temperature normal the first two days; elevated and of septic type up to the 15th. No fever after the 15th. Death December 18.

Postmortem report: No edema; no fluid in the serous cavities. Marked dilation of the heart, especially the right auricle. Hypertrophy of the right ventricle; no hypertrophy of the left ventricle. Transverse measurement of the heart 15 cm. The left auricle is largely filled with a mural thrombus which covers all parts of its wall and is about 2 cm. in thickness; only a small passage remains for blood in the left auricle. The mitral valve is markedly thickened and stiffened. The opening is reduced to a narrow slit. There are a few small fresh thrombi on the mitral leaflets. Slight thickening and retraction of one of the aortic leaflets. Hemorrhagic infarcts in the lungs. Old infarcts in the spleen.

Diagnoses: Subacute bacterial endocarditis developing on an old healed mitral valve; chronic passive congestion of the viscera; infarcts of the lungs and spleen; mural thrombus of the left auricle.

Comment: Nearly half the cases of subacute bacterial endocarditis develop upon an old rheumatic valve defect. The rheumatic infection probably occurred at the age of 18 years when she had acute rheumatic fever. It frequently happens that no symptoms develop from a mitral stenosis until many years have elapsed.

Autopsy—25—603.

Boy three years old, admitted August 10. Had had persistent constipation for nearly three years. Had been given mineral oil 2 dr. t. i. d. continuously on the order of the family physician. Without this laxative he would suffer severe constipation. The stools had always been large and foul smelling.

No other symptoms until August 9 at which time he developed fecal vomiting.

Physical examination: Abdomen greatly distended, round and tympanitic; no point of tenderness; no

rigidity. Heart rate 150; respiratory rate 60. Erythrocytes 6,000,000; leucocytes 11,000; polymorphonuclears 48 per cent, lymphocytes 46 per cent, monocytes 6 per cent. Rectal examination disclosed hard fecal masses in the lower rectum.

Patient became very drowsy and finally cyanosis appeared. Extremities became cold; respiration rapid and shallow; pulse rapid and weak. There was no fever. He died six hour after admission.

Postmortem report: Well nourished male child, three years old, weighing about 40 pounds. Marked abdominal distention. No ascites; no hydrothorax. The large intestine is enormously enlarged throughout its entire extent except the distal 20 cm. The wall is greatly thickened. The mucosa is reddened and swollen. At the rectal end there is a small shallow ulcer about 1 cm. in diameter. The contents of the large intestine are greenish brown, mushy, and semiliquid in character and have a very foul odor. A hard fecolith about 2 cm. in diameter is lodged in the rectum. On the peritoneal side of the rectum there is a dense fold of peritoneum which seems to interfere with the distention of the rectum. No disease of any other organ.

Diagnosis: Congenital megacolon (Hirschsprung's disease).

Comment: Death was due to intestinal obstruction. Death in Hirschsprung's disease often takes the form of intestinal obstruction. There is some anatomic basis in this case for the hypertrophy and dilation of the colon. The peritoneal band on the anterior aspect of the rectum seems to constrict the rectum.

Autopsy—27—1136.

Girl, 4 years old, admitted to hospital October 25, 1927, with a very high fever and a swollen, painful, reddened area in the left inguinal region.

About one year ago she had been given an immunizing dose of toxin-antitoxin for diphtheria. On October 10, 1927, she was exposed to scarlet fever. She was entirely well at this time but was given an immunizing dose of antitoxin as a protection against scarlet fever. On October 15 she developed a severe urticaria which was very prominent and persisted for two days. On October 17 the urticaria had faded but when she woke the morning of the 18th she was covered with another rash which somewhat simulated a scarlet fever rash. At the same time she developed a high fever with a general adenopathy but no sore throat. On the 20th she had another type of rash which consisted of reddish papules with bright red peripheries and bluish centers. This rash was distributed at various places over the entire body. All the peripheral lymph nodes were swollen and in the left inguinal region was a mass, apparently enlarged lymph nodes, which was bright red in color in addition to being swollen and tender. On the 25th her temperature rose to 104° and she was brought into the hospital.

The leucocyte count October 26 was 19,700; October 28, 15,500, with 84 per cent polymorphonuclears, 14 per cent lymphocytes, 1 per cent transitionals, and 1 per cent basophils.

The urine upon admission showed a cloud of al-

bumin with an occasional lymphocyte. The blood culture on October 29 showed no growth.

Her temperature on admission was 105°. It varied between 103° and 105° until death. The pulse ranged from 130 to 150. No other signs or symptoms were found. Her condition grew worse until her death on the morning of October 30.

Postmortem report: Moderate ascites; bilateral hydrothorax; hydropericardium. Marked enlargement of all the lymph nodes throughout the body. Marked congestion of the lungs and kidneys.

Diagnosis: Serum sickness.

Comment: The child was sensitized to horse serum by the previous treatment for diphtheria one year before. The serum sickness was produced by the horse serum in the scarlet fever antitoxin. The typical symptoms and signs of serum sickness were present, namely, onset several days after the injection, fever, leucocytosis, adenopathy, etc.

Autopsy—25—701.

Woman, 54, admitted September 15, 1925, complaining of generalized anasarca, dyspnea, and weakness. The present illness began one month previously with swelling of the feet and severe headaches. The swelling gradually spread to the abdomen and face. Menopause 8 years ago. Six months ago she had a rather marked hemorrhage from the vagina. There had been no vaginal hemorrhage since that time and no vaginal discharge of any kind.

Physical examination: Markedly anemic; uremic odor to the breath; generalized anasarca. Heart 10.5 cm. to the left in the fifth interspace on percussion. Blood pressure 180/94. A blowing roughened systolic murmur at the apex transmitted over the entire precordium. Enlarged abdomen with definite fluid wave. Palpable right inguinal lymph nodes. Vaginal examination revealed an ulcerating firm growth involving the greater part of the cervix. Blood chemistry: Creatinin 3.75 m.g.; urea nitrogen 46.8 mg.; sugar .105 per cent.

Urine acid; specific gravity 1025; no albumin; no sugar; occasional leucocytes; no erythrocytes. Blood: hemoglobin 40 per cent; erythrocytes 2,830,000; leucocytes 22,000; polymorphonuclears 77 per cent; lymphocytes 20 per cent; large mononuclears 3 per cent. Positive blood Wassermann.

The patient was apparently improving slightly when at midnight of September 17 she complained of dyspnea and died suddenly.

Postmortem report: Ascites 200 c.c.; hydrothorax 500 c.c. each side; hydropericardium 300 c.c.; generalized anasarca. Heart weighs 330 grams; shows no disease. Marked edema of both lungs. Passive congestion of the liver. There is a large carcinoma of the cervix uteri which has extended into the broad ligaments and blocked both ureters. There is marked bilateral hydronephrosis and hydroureter; left pyelonephritis. Thrombosis of ovarian veins. Metastases in liver, spleen, and retroperitoneal lymph nodes.

Diagnosis: Carcinoma of the cervix resulting in bilateral hydronephrosis and uremia.

Comment: The carcinoma of the cervix had produced a hemorrhage six months previously but had caused no local symptoms since that time and therefore did not attract attention. Death resulted from hydronephrosis which is a common termination of

carcinoma of the cervix. An unusual feature is the general edema which does not often accompany a hydronephrosis. Another unusual feature is the cardiac failure, which may be partly responsible for the edema.

PRINCIPLES OF PRACTICAL ENDOCRINE THERAPY*

BY J. F. RITTER, M.D.

MAQUOKETA, IOWA

In the presentation of the subject of practical endocrine therapy, my object will be attained if I can successfully impress this audience with no more than three salient facts:

(1) That vascular hypertension is amenable to satisfactory control;

(2) That cardiac disease and cardiac mortality can be greatly ameliorated and reduced by the control of vascular hypertension;

(3) That next in importance is the correction of vascular hypotension in a large and variant class of asthenics, allergies, and many other chronic maladies.

But of all the therapeutic fads, fancies, foibles and fakes, scientific and pseudo-scientific, that have flourished from the times of Æsculapius and Hippocrates to the present day, not one has leant itself so facilely to misinterpretation, misrepresentation, and charlatan-exploitation, as that of endocrine therapy. Master Assiduous Scoop, the cub reporter, by his Mephistophelian imagination, has draped the meritorious works of Voronoff and Steinach in an impossible glamour of falsehood. Through him, the public press has foisted upon a credulous world and an agnostic profession a chimera which prompts the laity to become Ponce de Leons, and has aroused the ardent hostility of the critical conservative profession. The moment glandular therapy is mentioned, its advocate is branded as a devotee of the Primrose Path, a worshiper at the shrines of the phallus, Eros and Venus, in his attempt to convert shriveled up crones into flappers and broken down old roués into ardent young sheiks, but nothing could be farther from the truth.

Legitimate endocrine therapy has nothing to do with Rejuvenation and Fountain-of-Youth fallacies, but it has to do with the rehabilitation of dyscrinisms in both acute and chronic disease. This, too, in the most unyielding forms of disease as usually treated by the employment of galenicals and inorganic medication. Of these, vascular hypertension, vascular hypotension, peptic ulcer, moderate nephritis, asthenics, and even dementia precox have yielded favorable reactions by the administration of various nascent glandular combinations.

In no domain of scientific medical research are the fields so broad or the prospects for achievements so brilliant, as in the wide expanse of endocrine therapy. During several decades the thyroid has grudgingly but gradually yielded up its secrets; the adrenal has demonstrated its efficacy as a shock-absorber; from the pancreas has been moulded the rifle-shot, insulin, for the relief and life-prolongation of innumerable diabetics; the pituitary is still giving up its secrets of growth control, and you have all saved the lives of mothers and babes in dystocia, while the recent isolation of a third pituitary hormone from the anterior lobe suggests potential possibilities in the control of bodily fluids; the parathyroids are asserting their empire over calcium metabolism, while the ovarian follicular hormone of Allen, Pratt and Doisy, which has recently been isolated in crystalline form, has conclusively demonstrated itself to be a definitely reliable reconstructive of the endometrium and vaginal mucosa in atrophied states of the generative organs. These are but a few of these vital ferments, all of which appear to be potent catalysts, assisting in the regulation of metabolism without themselves being

*Read before the Sioux Valley Medical Association, Sioux City, Iowa, January 29-30, 1930.

destroyed, which by their specific action have already revolutionized whole sections of general therapeutics.

Many other adaptations are still possible, in fact, almost certain, in many previously incurable maladies. The dyscrinisms of both acute and chronic disease are sending out a belated cry for recognition. To meet a portion of this need, the endocrine of greatest present promise, demonstrated by clinical results through nearly eight years of experimental testing in approximately one thousand cases, is that of nascent interstitial hormone in the control of vascular hypertension. This is the simply expressed secretion of the ovary or testicle before puberty, thus eliminating the problem of sex, as by this simple procedure the procreative secretion is excluded.

You may ask what is meant by the term "nascent hormone?" By this is meant any glandular secretion in its native state as prepared by Dame Nature in her perfect laboratory, the living gland, without the devitalizing influence of antiseptics and preservatives. The active principles formerly enumerated constitute the shock troops to shatter the resistance of the enemy, disease, and are analogous to our galenical alkaloids. Atropine and strychnine give definite but restricted therapeutic reactions, while preparations from the whole plants, belladonna and nux vomica, are not so restricted to certain specific uses. In like manner, the nascent hormones from the entire glands, with their embryonic urge, constitute the infantry for the massed attack, to press the advantage gained by the shock troops. In other words, the nascent hormones still possess active vital attributes, instead of being in a measure devitalized by an embalming process.

Within this endocrine empire we are beginning to recognize synergists and antagonists as definitely as in the use of inorganic medicaments, while the clinical reactions are more conclusive and definite than those of many of our galenicals. Sajous states that the ignition mechanism is an endocrine triumvirate of the pituitary, thyroid and adrenal, functioning in harmony as synergists. The pancreas appears to antagonize a too active thyroid or adrenal, while the thyroid is synergistic with the gonad, male or female. A prompt reaction in hypo-adrenalism is noted by the administration of its true synergist, the interstitial hormone. In fact, in nearly all dyscrinisms, a peculiar synergistic action is noted by the use of the interstitial secretion, suggesting its designation as a "vital gyroscope."

Current objections.—(1) These radical state-

ments, supported by a long list of clinical reactions, are antagonized by complaints of the variable potency and unreliable results of pharmacologic preparations. Granted, but this is partly due to necessary devitalizing laboratory manipulations by the addition of antiseptics and preservatives. Successful endocrine therapy as yet demands that these delicate corrective and vitalizing catalysts be administered in their nascent or native state, direct from the animal donor. This requires the formation of suitable animal herds from which the desired glandular substances are readily available in the various combinations adapted to the needs of each individual case.

(2) Objections to oral administration are well sustained because of the destructive action of the digestive ferments, except for the thyroid and parathyroid. In each we find a definite inorganic ingredient, iodine or calcium, which may serve as a nucleus to form a more stable compound resistant to the disintegrating digestive process. All others, so far, appear to require hypodermatic administration to insure constantly definite clinical reactions. This evidence has accumulated in the treatment of approximately two thousand promiscuous cases of the greatest diversity. Repeatedly, after oral administration had proved negative, injection of the nascent hormone gave prompt and definite response, equally those of our most active galenicals.

(3) Endocrine therapy is constantly attacked by the charge of empiricism, as if it were a crime, but the entire superstructure of modern medicine rests upon a secure foundation of empiricism, sponsored by such master empiricists as Jenner, Harvey, Pasteur, Lister, and a host of other original revolutionary investigators. Has iron in chlorosis been discarded because a rational explanation of its action has not materialized? Has quinine in malaria been discontinued, or the use of mercurial derivatives in syphilis abandoned as the result of a similar charge? Or do we hesitate to prescribe liver in pernicious anemia for lack of a rational explanation of its unquestionable therapeutic efficacy?

(4) When we state that within 24 to 48 hours, the routine fall of vascular readings is from 25 to 75 m.m. of mercury, the most frequent skepticism is the query "will it stay down?" Emphatically no. Do we expect one dose of quinine to cure a case of malaria, or to establish a cinchona grove on the patient's anatomy? Or a dose of iron in chlorosis to do

likewise or develop an iron mine in the entrails of the sufferer? In no case approximating 200 systolic and 100 diastolic should the case be accepted for less than six months' treatment.

(5) Essential hypertension (so-called) is likewise cited as a necessary, conservative and protective process. I would cite Woodrow Wilson, W. J. Bryan and our own J. B. Cummins in refutation of this fallacy. The daily press throughout this broad land reports case after case of prominent men in highly responsible positions as victims of some crisis in the cardiovascular-renal group. Almost invariably it occurs at the pinnacle of their usefulness and responsibility.

(6) To the objection that heterogenous transplants of endocrines are but transient, lasting at most a few weeks or months, I would make the assertion that this is immaterial. The nascent hormone contained in the transplant, by substitution or activation, provides the initial urge toward the prompt temporary control of the graver symptoms. Later, the gradual absorption of the patently still active tissue corrects the dyscrinism for which it is given, by a process of hemostimulation, successfully bridging the chasm between disease and health. To the empirical clinician without laboratory facilities, the fate of the transplanted tissue is as immaterial as with quinine, iron, mercury or liver, if his patient is restored to health, whether this is conceded as a "cure" or only as a "clinical recovery."

(7) The fallacy of sex-modification is frequently mentioned as an objection. But the interstitial hormone from either male or female animal gives identical reactions in either adult sex. However, conservatism would refrain from giving interstitial hormone to children of the opposite sex. But adult tissues can in no sense be modified any more than diphtheritic horse serum can make the patient nicker at the sight of a load of alfalfa.

(8) Anaphylaxis and protein sensitization composes a bugbear of no mean proportions. In the use of nascent hormones direct from young healthy goats, it is of extremely rare occurrence, and adrenalin or adrenal tissue promptly combats the first indication. Making the deposits deeply, as far away from the cutaneous surface as possible, is also an efficient preventive measure. After having given many thousands of injections, it appears that anaphylaxis and protein shock are very largely due to the inclusion of dead protein. Protein direct from the animal

still possessed of a modicum of vitality, is practically innocuous. In endocrine transplants the routine dosage is ten grammes of actual tissue with practical immunity from excessive local reaction or "tissue insult."

Digressing for a moment, I desire to bring home to you a few statistics of our own professional mortality, in which cardiac disease heads the list, closely followed by vascular and renal disease.

1926—2420—1307—54.00% cardiovascular-renal;
1926—2677—1498—52.20;
1927—2790—1573—56.30;
1928—2792—1499—53.75;
1929—2796—1362—48.70; or 53% for the 5 years.

In the United States alone, there is an annual mortality from heart disease of 140,000, of which more than 70,000, or 50 per cent is due to vascular hypertension or associated with it. The data accumulating at Maquoketa, Iowa, lead to the belief that the incipient stage of these maladies associated with vascular hypertension could be largely controlled or prevented from development by appropriate endocrine therapy; that in established cases it would greatly retard progress, and in the far advanced give much relief and prolong comfortable existence. It is reasonable to believe that the control of vascular hypertension would displace heart disease from first place in our mortality lists.

In the control of vascular hypertension, much depends on the condition of the cardiac musculature, and the absence or degree of arteriosclerotic involvement. For convenience, vascular cases are here arranged in three classes; functional, intermediate and sclerotic:

(1) The functional variety has embraced about 50 per cent of all cases, an arbitrary limit being set at 200 systolic and 100 diastolic. With these is secured clinical recovery with normal readings in practically the entire group, supported by the evidence of from one to nearly eight years;

(2) Intermediate, ranging in general from 200/100 to 250/125, comprising about 40 per cent, in which organic involvement in the form of arteriosclerosis in some degree is manifest. Here, control similar to that of diabetes by insulin can generally be established, with weekly or fortnightly treatments for several months. Stabilization approximating normal is then maintained by treatment as indicated one to six months apart.

(3) Sclerotic, about 10 per cent, ranging from 250/125 to as high as 300/160, in which

subjective symptoms are relieved, with a systolic recession of from 50 to 100 m.m. and a corresponding fall of the diastolic. In this group, continuous attention from once a week to once a month is imperative to maintain satisfactory readings. In addition to the reading levels, an estimation of the cardiac muscle load is a decided aid in observing the progress of each case, and a formula for this purpose has been devised as follows:

The systolic and diastolic are added, and multiplied by the pulse rate and three decimals pointed off from the right of the product, the normal cardiac labor being considered as from 12 to 18. In a general way, routine reactions can be definitely relied upon to be approximately as follows:

Taking cases largely at the age of 60 years, the four columns being: S, the systolic; D, diastolic; R, pulse rate and L the cardiac muscle load.

	Age	S	D	R	L	S	D	R	L
Functionally	60—200/100/	72—21.6—	150/	80/72—	16.6				
Intermediate	60—230/120/	72—25.2—	175/100/	72—	19.8				
Sclerotic	60—285/140/	72—30.6—	190/110/	72—	21.6				
“ (Day)	68—285/130/	72—29.9—	160/	95/72—	18.3				
“ (Cov)	60—302/162/	72—33.4—	200/110/	72—	22.3				
“ (Lun)	60—298/148/112—	49.95	untreated						

The above reactions are representative of routine results in unselected cases. I would stress the decided change in cardiac labor represented in this table. The functionals almost invariably remain within the normal range, while those of the intermediate and sclerotic approach the normal to such a degree as to insure decided cardiac relief, along with the mitigation or elimination of most all of the distressing subjective symptoms, often restoring occupational efficiency. By the sphygmomanometer and estimation of the cardiac muscle load we can make an accurate record of the progress of the case. But the same environment and habits that incited the condition are prone to re-establish it, but if watched and treated at suitable intervals the final crisis can be definitely postponed.

Many of our leading therapists object to instructing the laity on blood pressure, but this endocrine work has convinced me that lay knowledge of hypertension is just as important as is that being disseminated on cancer, tuberculosis and cardiac disease. We are told by our leaders there is but transient relief for hypertension, which should exclude the sufferer from a knowledge of his condition. But there is a practical treatment giving satisfactory control in vascular hypertension, rivaling that of insulin in diabetes, and in the initial stages equalling that of toxin-antitoxin in diphtheria and vaccine in small-pox as a preventive measure. With the general insti-

tution of appropriate endocrine therapy from the age of 40 years, I believe that in ten years we would see a decline of 50 per cent in both cardiac and cerebral hemorrhage mortality.

In nephritis, the fear of too rapidly decreasing the vascular tension is groundless, as the change in hydrostatic pressure is compensated by an increased flow of urine. This is illustrated by the case of J.R.C., with a pressure of 240/140, about 12 ounces of urine loaded with albumen, threatened decompensation, dyspnea, palpitation and edematous extremities. In 48 hours he gave a reading of 170/100, and within the week the urine had increased to 40 to 48 ounces with disappearance of the albumen. His subjective symptoms also were in practically complete abeyance. Eighteen months before he had been given two years as the utmost to anticipate.

Accumulating evidence seems to support the hypothesis that the great chain of endocrine glands vitalizes and controls the vegetative forces and that this control is essential to vigorous health, through their hormones and allied substances. These hormones individually possess to a degree, a gyroscopic or stabilizing rôle, an interrelation which regulates the automatic processes, stabilizing metabolism. In health there must exist a balanced “hormone correlation,” insuring reciprocal activation of function.

Various internal organs appear also to elaborate substances which simulate hormone activity, as the liver and stomach in pernicious anemia. Similarly, the intestinal mucosa, the spleen, the bone marrow, the mammary gland, the prostate, and even the placenta, give promise of ultimately yielding secretions allied to hormones in action and not infrequently simulating the effects of vitamins.

The reactions noted suggest that the endocrine hormones and these associated substances, are true catalysts, possessing the power to accelerate metabolism without themselves being destroyed, and by a “reciprocal hormonal index” maintain a vigorous ultimate cell-chemistry. Certain it is, in both acute and chronic disease, a recognized dyscrinism can almost invariably be ameliorated or wholly corrected by the hypodermic injection of the corresponding extraneous hormone in its fresh or nascent state. In any physical state in which the vital processes are below normal, the smouldering vital spark is promptly fanned to a flame without becoming a conflagration, and the patient experiences a general sense of well-being without over-stimulation.

To illustrate what I have called a gyroscopic action of interstitial hormone, I would cite two

cases, both aged 64, one a hypertensive and one a hypotensive. The hypertensive stood at 265 systolic and the hypotensive at 105. One cubic centimeter of interstitial hormone was given each, from the same bottle. In 24 hours the hypertensive showed 165 systolic and the hypotensive 145, showing a fall of 100 in the former and a rise of 40 in the latter.

This brings us logically to a very brief consideration of that large class where one of the cardinal objective symptoms is that of subnormal vascular tension. A very large proportion of asthenics, allergics, neurasthenics, toxemics, most peptic ulcer victims and many other types, present a low pulse pressure of from 15 to 25 m.m. in the place of the 40 to 60 m.m. considered normal. The lower the pulse pressure, the greater appears to be the defect in systemic metabolism. So prominent and constant has this been that the pulse pressure has been likened to a yardstick for estimating defective systemic chemism, leading to the following formula:

$$\frac{\text{Systolic plus diastolic times pulse pressure}}{1000} = \frac{\text{Systemic}}{\text{Chemism}}$$

The normal pulse pressure for the ages of 20, 50 and 80 years is considered respectively as 40, 45 and 50 m.m. On working out this formula, we have respectively 8, 10.125 and 12.5 as tentative normals, awaiting further data to improve the formula if possible. Taking an asthenic of 100/85, we have an index of 2.775, or only one-third of normal at 20 years. A single cubic centimeter of interstitial hormone, in nearly all, in 24 hours will restore a nearly normal 8, with the disappearance of subjective malaise, cold extremities, clammy skin, etc., with an increased cutaneous circulation, and an alert, active volition. The age of 50 not infrequently shows 110/90, giving an index of 4, or less than half of normal, while some at 80 give 125/100, an index of 5.625, also less than half of the supposed normal. When the systolic does not rise quite to the theoretical normal, the diastolic frequently subsides 10 m.m., establishing a normal pulse pressure and a nearly normal chemical index. I cannot too strongly emphasize the satisfaction derived from the application of this simple procedure in subnormal metabolism, with the pulse pressure as the unit of measure. It has not failed in several hundred cases, and can be regarded as dependable, with practical disregard of the etiology of the subnormal state.

I hope I have demonstrated to your satisfaction that the reactions in vascular defects by the use of hormones are definite and conclusive. It

may be of interest to give the more salient reasons for the selection of the goat as the animal donor. In blood transfusion, the donors must be typed, and this principle was crudely followed by clinical tests from sheep, pigs, dogs, calves, colts and goats. Of these, the goat gave decidedly more satisfactory and uniform reactions than any of the others, and these tests were made upon human beings afflicted with various maladies instead of upon divergent species in induced states where it was attempted to stimulate various diseases. The following reasons determine the final choice of the goat:

(1) The goat has a long life span, 15 to 20 years;

(2) It is the nearest free from disease communicable to man;

(3) Its milk is nearest, chemically, to human milk, and it is not unreasonable to believe the endocrine secretions bear a similar analogy;

(4) The goat's reactions to medication are practically identical to those of man;

(5) Hormones and tissues from the goat provoke the least "tissue insult" of all those tried;

(6) Reactions are prompt, definite and reliable within 24 hours as are those of the galenic alkaloids.

The cause of this prompt therapeutic reaction may be due to one or more processes:

(1) To a direct antitoxic effect, neutralizing a hypothetical circulatory toxin;

(2) To protein shock, which therapeutic reactions do not support;

(3) To a modified phagocytosis;

(4) To a direct medullary influence, relaxing the vaso-constrictors;

(5) To some as yet unexplained modification of systemic metabolism;

(6) To a modified glandular correlation through restored hormone activation.

Whether due to one or more of these influences, the fact of decided recession of level readings in hypertension, and as decided elevation of readings in hypotension, remain to encourage the empirical clinician, until scientific laboratory analysis determines which is responsible. Until such time arrives, we per force must continue to rely upon empiricism for clinical results.

Several of the endocrines, being compound glands in function, elaborate within themselves apparently antagonistic secretions: The posterior pituitary furnishes a vascular pressor element while the anterior lobe produces a vascular depressant. Insulin, when introduced with the whole pancreas in the form of Islets of Langer-

hans, is destroyed by the pancreatic enzymes and sloughing ensues. But this can be avoided by securing the embryo pancreas at mid-pregnancy, at which time the Islands of Langerhans are fully developed while the enzyme-forming tissues are still undeveloped. This fact may yet give us the cue to convert the present palliative diabetic treatment into a curative treatment, by the substitution of extraneous Langerhans tissues free of enzymes by transplantation. A double rôle is also met with in the testicle, in that the cells of Lydig produce a secretion entirely distinct from that of the spermatogenetic tissue, furnishing the interstitial hormone. In early life, before puberty, the gonads secrete a definite interstitial hormone only, and up to puberty it is obtainable in its pure state, without admixture with the procreative secretion, thus absolutely eliminating the factor of sex. An analogous condition obtains in females, and preparations from the ovary at this early age are as definite and reliable in uniform action, not being vitiated by the estrus or menstrual cycle, the maturation of the ovum and the ripening of the graafian follicle. Preparations from the young ovary before puberty appear to give identical reactions to those from the testicle when used on either male or female adult patients.

Evidence is rapidly accumulating that the production of the interstitial hormone is a life-long function, and its vigor at birth is a determining factor in the life expectancy of the individual. Its activity increases to the time of puberty, remains vigorously potent but largely masked by the sexual life in both sexes to the age of the menopause, then emerges from its partial obscuration and resumes definite control of the endocrine secretions in a regulatory way. Upon its remaining vigor seems to depend the approach or postponement of senescence. It seems logical that the judicious conservation of this secretion from the age of forty years would prolong vitality and retard senility, and provide at least a partial shield against the development of cardiovascular-renal disease decimating our professional ranks.

In the practical application of endocrine therapy, two salient features obtain; that of the hypodermic injection of the various hormones obtained by simple expression of the secretion, and by the transplantation of the actual glandular tissue. The former is largely employed where the patient is accessible, treatments being given at the office one to two weeks apart for weeks or months as the exigencies of the case

require. The regulation dosage is from one to one and one-half c.c. of the hormone given by an ordinary Luer syringe with a 2-inch needle of 20 gauge. The preferred site is the abdominal adipose, one to three inches external and below or on a line with the umbilicus on either side. The dose is given in two deposits to avoid local tissue insult. The needle entrance is made perpendicularly to the cutaneous surface, then slanted and inserted the entire length. The hormone is slowly deposited as the needle is carefully withdrawn. This makes the deposit in the form of a streak and furnishes a greater surface for phagocytosis and resulting nutrition, greatly lessening the tendency to local reaction. In the rare cases where cutaneous irritation simulating urticaria occurs, probably from extraneous protein, cold applications give prompt control. In no case should heat be applied, as if the local temperature rises above 100° F., devitalization is threatened with risk of sloughing. Following the initial desensitizing or "index" treatment, the patient is instructed to drink water copiously the remainder of the day, and to take an unfailling laxative on retiring. This insures elimination of systemic débris and prevents toxic developments simulating influenza the following day.

In the treatment of vascular hypertension with interstitial hormone, there is within 24 hours a recession of vascular levels of from 25 to 75 m.m. without depression. The second 24 hours may show a secondary elevation nearing the original levels, followed by a gradual lysis for several days. Seven to fourteen days later a gradual but steady rise may appear, which is the indication for resumption of treatment. No case approximating 200 systolic and 100 diastolic should be accepted for less than six months treatment.

In vascular hypotension, no matter what its etiologic affiliations, the same procedure is followed. Here the effect of interstitial hormone is to elevate the systolic reading from 15 to 40 m.m. or more. Many of these asthenics exhibit an elevated diastolic, in which it is lowered from 5 to 10 m.m, this frequently giving a pulse pressure trebled over the previous reading. This recovery toward the normal is more sustained than in hypertension, and there is a very pronounced relief of the patient's subjective symptoms, and this is nearly always maintained. The relief to the patient is in direct proportion to the elevation of the pulse pressure, which can readily be estimated by the formula previously given.

The indications for transplantation of endocrine tissue are if the patient lives at too great a distance to permit repeated visits, or where the persistent use of the hormone for a reasonable time fails to maintain the desired improvement. In either case, an initial desensitizing dose is invariably given, followed in two or three days by the glandular tissue. Where this initial treatment fails to give a completely satisfactory reaction, a second or third including anterior pituitary or thyroid serum may be given, postponing the transplant until a decision is reached as to what endocrine combination will best maintain satisfactory readings.

When this is determined, the donor is antiseptically prepared, the endocrines secured with their capsules intact. These are transferred into antiseptic solutions and kept at body temperature and with least possible loss of time transferred to the depositor, untouched by anything but sterilized instruments and the transfer to patient made with the least possible loss of time.

The depositor is a ten to twenty gramme syringe with a threaded shaft that works on the principle of an automobile grease gun. The tissue is not macerated, but placed in the syringe whole until it is completely filled. A certain number of turns deposits a definite amount of tissue. The bill of the depositor is a large caliber hypodermic needle of about 12 gauge, and from four to six inches long.

The site of the necessary incision is prepared the same as for any abdominal operation, generally selecting the median line an inch or two below the umbilicus. A local, eucain preferred, cares for the cutis, and an incision of about one-eighth inch is made to introduce the bill of the depositor.

This is then directed upward and outward deeply through the adipose to the hilt of the needle, and the first deposit begun. While the depositor is slowly withdrawn the tissue is expressed by the screw action of the shaft. Without removal, the needle is again carried hori-

zontally and the second deposit similarly made. A third, and sometimes a fourth, deposit are likewise made on the same side directed according to the location of the greatest amount of adipose and as deeply as possible, but avoiding penetration of the sheaths of the abdominal muscles. Without removing the depositor, but by changing its direction, the same procedure is completed on the opposite side. When completed we have from six to eight spokes of a wheel radiating from the point of insertion, which is then surgically sealed and protected by an appropriate dressing.

The patient should be kept quiet for several days, but this is somewhat difficult, as very little discomfort follows. He is usually capable of being up to meals and experiences but little inconvenience if no undue stress is applied to the abdomen.

Within a week, most or all of the local tenderness has vanished and an inventory can be taken of his further needs. He is generally permitted to return home, and the subsequent hormone medication is administered by his local physician. These cases particularly should be under regular observation and supported by occasional treatment as indicated by the vascular readings and the cardiac behavior.

Where arteriosclerosis is present, generally indicated by a high and resistant diastolic, heavier and more frequent dosage is necessary, while in the functionals supervision for several months is frequently all that is found necessary.

Having practiced medicine since 1895, I have found no part of the practice so fascinating or yielding such interesting and at times spectacular reactions as that of endocrine medication. In the eight years last past, more pleasure and relief of obstinate maladies have resulted than during my entire former medical service. I assure you that he who becomes interested in legitimate endocrine therapy will not be disappointed.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of February 19, 1930

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 19, 1930, having been postponed one week on account of the meeting of the American

College of Physicians. Dinner was served at 7:00 p. m. and the meeting was called to order at 8:00 p. m. by the President, Dr. Emil S. Geist. There were 38 members and 1 visitor present.

Minutes of the January meeting were read and approved.

A committee consisting of Drs. Freeman, Foley, and S. E. Sweitzer was appointed by the president to draw up a memorial of Dr. Paul B. Cook.

The scientific program of the evening consisted of two theses and a case report, as follow :

Dr. Albert G. Schulze, St. Paul, read his thesis entitled "A Plea for the Radical Treatment of Incomplete Abortion."

DISCUSSION

DR. JOHN F. NOBLE (St. Paul) (by invitation): The curettings from the cases which Dr. Schulze has described were sent to the Ancker Hospital Laboratory for examination. They were described grossly and microscopically and this description was filed with the charts. The data which he has cited were taken from these reports. No clinical histories were available with the specimens so that, in the few cases where a diagnosis of acute or chronic endometritis was made, only endometrium was found in the specimens and this endometrium contained acute or chronic inflammatory cells with no products of conception present to confirm the clinical diagnosis of incomplete abortion.

I do not believe that the division of these cases into two groups, clean and infected, on the basis of the presence or absence of inflammatory cells is sound. The very nature of incomplete abortion makes the presence of necrotic tissue a common finding and the necrotic material sets up an inflammatory reaction in the uterus which cannot be separated microscopically from bacterial inflammation, and in those instances where large amounts of material were removed from the uterus, only small blocks of tissue were examined and other areas might have shown leucocytes. I think my reports have misled Dr. Schulze in this matter.

Practically the only method by which a pathologist can judge the value of a therapeutic measure of this type is by the mortality rate. The fact that Dr. Schulze has treated 235 consecutive cases without a death speaks for itself. When I went to the Ancker Hospital about five years ago and these specimens began to appear in the laboratory, I fully expected to be called upon to autopsy some of them, but as time went on and no deaths occurred, I came to the conclusion that at least in his hands it was a satisfactory method of treatment.

From a pathological standpoint, there are two things to consider when a curettage of an incomplete abortion is contemplated. In the first place a curette is bound to break down the natural defensive reaction in the uterine wall against infection, and to open up channels for infection, but in thoroughly removing necrotic tissue which is an excellent culture medium, the danger of infection is reduced. This is undoubtedly desirable. The question then is simply: What is the least harmful method of removing placental and decidual remnants from the uterus?

I would like to ask Dr. Schulze whether or not any of these cases were criminal abortions.

DR. J. L. ROTHROCK (St. Paul): I was very much interested in Dr. Schulze's paper, especially his plan of treatment.

I had hoped he would say something about abortion in the various stages of pregnancy up to four months. It seems he evidently has dealt principally with abortions of early pregnancy. We are liable to fall into error in attempting to apply a stereotyped plan of treatment to all cases, and here, as elsewhere, I believe it a safer plan to meet indications existing.

I, too, have had a considerable experience in the treatment of incomplete abortions. Formerly, two or more decades ago, it was the almost universal practice to empty the uterus with the curette, as soon as it was decided that the abortion was inevitable. In applying this plan indiscriminately to all manner of cases, unpleasant consequences sometimes followed, especially in infected cases, and it is not always possible to tell in advance whether infection is present or not. For that reason I have long since adopted more conservative measures. My plan of treatment was usually this: If the abortion seemed inevitable and the cervix was undilated, and if considerable hemorrhage was taking place, a gauze pack was firmly placed in the vaginal vault around the cervix and the patient was then given quinin or ergot and, in many instances, within 8 to 12 hours on removal of the pack, the contents of the uterus would be expelled or be protruding from the dilated cervix and could easily be removed with a forceps without invading the uterine cavity. If not, the cervix would be found sufficiently dilated to admit a finger and the uterine cavity could be explored and any adherent or retained membrane could easily be removed, often without an anesthetic. Other cases, which, on account of hemorrhage, demanded prompt relief, were of course curetted.

I think the objections and difficulties, mentioned by Dr. Schulze, to digital removal of retained portions of placenta and membranes are theoretical and in my experience have not been met. My experience in this respect has been identical with Dr. Williams', so admirably expressed in his textbook.

One of the surprising things in early abortion is the comparative freedom from fatality on account of hemorrhage. I have never known a case of fatal hemorrhage in an early abortion, and Hofmeier quotes Alfred Hegar as stating that in more than 40 years' experience he could recall no case that died from hemorrhage following abortion in early pregnancy. In the recommendation of the curette, its dangers must not be lost sight of. If the uterus is soft, it is easily perforated, perhaps without much risk to the patient, but still a potential risk. A too thorough curettage of the recently pregnant uterus may remove so much of the endometrium that scars are left and if the patient becomes pregnant again there may be an adherent placenta.

Furthermore, the curette is not so certain a method of removing all of the placental tissue. To be convinced of this one has only to make a digital examination following a curettage to note how much placental tissue has been left behind. Another disadvantage of curettage is that the curette stimulates the normal rhythmic contraction of the uterus to an exaggerated degree and my experience has been the loss of much more blood during curettage

than where the placenta is removed with the finger.

The general consensus of opinion is that the curette may be dangerous in infected cases, causing a rapid extension by opening up new avenues favoring extension.

The highly favorable outcome in this series is undoubtedly due in a large measure to Dr. Schulze's skill in the use of the curette but the thought occurs to me that in this series he was dealing almost entirely with uninfected cases, or at least not with hemolytic streptococcus infections.

DR. ARNOLD SCHWYZER (St. Paul): Dr. Schulze has had excellent results. However, he made the statement at the end of the paper that the use of a sharp curette is a safe procedure. I do not think that it is right to make such a broad statement to be followed by every practitioner. I will refer to one case I saw when still an assistant in the Women's Hospital of Zurich. The chief assistant was curetting a woman and I was assisting him. He got out a lot of material, a lot of white bands, and it seemed queer that so much material could come out. I then remarked to him, "This is muscle." He had scraped out much of the uterine muscular tissue. She had fierce bleeding and was packed. When the packing was removed in about two days, the bleeding started again and we had to pack again, and after this a third time. Then the case seemed all right. But what happened later on I do not know. So, if one says that a sharp curette is a safe thing, this is stating too much. In skilled hands like Dr. Schulze's he has shown that it is all right; but to give that out as holding good for every doctor, is a dangerous thing. Furthermore, I do not think it is often necessary to insert the whole hand into the vagina to palpate the uterine cavity with one finger as Dr. Schulze stated. A sharp curette, especially in the later months, can do a great deal of damage. You do not need to get every shred at once; small particles will come away with the packing.

I would like to say here that a good number of years ago Professor Chlumsky published a paper in which he told of the value of a phenol-camphor mixture. When carbolic acid crystals and camphor crystals are put together they melt into a clear fluid. He used 30 per cent of carbolic acid and 60 per cent camphor, and the rest alcohol to make up 100. This is an exceedingly strong, non-cauterizing, antiseptic solution, and we moisten the gauze with this. You can leave it in for 3 days and it comes out still smelling sweet.

To return to the objection I raised: With a sharp instrument you might curette out the muscular coat if not careful and this possibility should be reckoned with. If we never have heard of this danger and do not watch what we scrape out, we are liable to do much damage even if we do not perforate the uterus.

DR. H. B. SWEETSER (Minneapolis): While listening to Dr. Schulze's paper, I said to myself, "In the hands of an expert, as is Dr. Schulze, possibly it is safe to use a sharp curette, but in the hands of the general practitioner, to whom many of these cases come, both in hospitals and in homes, I feel sure that such a procedure will result in disaster in not a few cases."

Twice, in my experience, I have had to resect coils of bowel which were pulled down through a perforation of the uterus under the mistaken impression that they were secundines. The wall of the pregnant or recently pregnant uterus is very soft and relaxed, and it requires a very educated tactile sensibility, especially when applied through a sharp curette, to determine that the curette is gliding along the wall and not through it. Therefore, I think it would be a dangerous thing to send out a report of this kind showing such good results in the hands of an expert.

DR. H. T. NIPPERT (St. Paul): When I started out as a country practitioner in St. Paul about 37 years ago when you could not get a patient to a hospital, I had more abortions than confinements the first few years. I used to go in, but not with a sharp curette. I used a dull curette and would clean out as much as I could and then went in with the finger and frequently had to go in again as I found after digital examination there were still some pieces of placental tissue or membranes left. A great many I emptied with only the index finger. One case especially comes to my mind. I had put the patient across the bed and soaked a few towels in bichloride of mercury solution and put over her abdomen and thighs. When I was curetting her the curette suddenly went in up to the handle and I said "that has gone through the uterus." On each visit afterwards I was afraid something would show up but nothing did. I feel like Dr. Schwyzer, if a woman is pregnant 3 or 4 months, I would wait and see what happened but if early in pregnancy I would go in with a dull curette. I have never seen any mishap nor had any bad results from it. Now things are done much more simply and antiseptically in the hospital. Even in private homes I would do it with the dull curette and think we would get along just as well.

DR. R. T. LAVAKE (Minneapolis): The importance of this subject demands a full and free discussion. My experience leads me to practice and advocate the conservative treatment of incomplete abortions. A survey of literature leads me to believe that it is the opinion of the great majority that the conservative treatment is the treatment of choice.

Dr. Schulze has outlined in his interesting paper his reasons for having changed from his advocacy of conservative treatment to his advocacy of radical treatment with the sharp curette. It is instructive, but quite disturbing to any positive attitude of assurance on any subject, to contemplate the widely different conclusions that can be drawn from the same cold facts and figures. To my mind, the facts and figures in Dr. Schulze's stimulating paper show what can be done with a sharp curette and not what should be done or advocated.

Conservative treatment of this condition implies non-interference except upon the indication of profound or protracted bleeding, or for the possible drainage of pus collections. In private practice most abortions are not induced and in these cases my experience convinces me that 9 out of 10 are so complete that routine intervention of any kind may be classed as meddling and unnecessary. In a general hospital a greater percentage of abortions prove to have been induced and a greater per-

centage will need interference at some period in their treatment. This is a point that I did not hear mentioned in this paper.

When profuse or extended bleeding points to the possible advisability of interference, to my mind each abortion should be considered as potentially infected until one can be reasonably sure that it is not, by the temperature, leucocyte and differential counts and, possibly, by the sedimentation test if doubt still prevails. Temperature alone, as a criterion of safety, is not sufficient. If it is an infected case, one can visualize the infected area as surrounded by a protective leucocytic barrier that must not be broken down, if avoidable, by any form of intervention. In any case, when intervention is definitely indicated, I deem the finger to be the safest instrument. If the finger proves to be inadequate, the next safest instrument is the largest dull curette that can be inserted. Even this should be used with the greatest caution. The larger the curette, the less likely is the danger of perforation. Although many of us have been lucky enough not to have perforated a uterus with a curette, most of us see at least one perforation a year, and our turn is to be expected. Very few men of large experience have not perforated a uterus.

In my opinion the sharp curette should be used mostly as a diagnostic instrument, and should be used as a curative agent only when infection has been as nearly definitely excluded as possible and when the condition is found to be other than an incomplete abortion. Even then the sharp curette is not without danger as I have learned from bitter experience in cases where, under the best conditions of surroundings, supervision and technic, the most alarming results of infection have followed a simple diagnostic curettage.

From the standpoint of relative safety, the number of days one should wait before intervention after the temperature, leucocyte count and sedimentation test have been normal, no one so far as I know can state with any degree of assurance. Personally I would rather have an interval of over a week than under a week, if the scant loss of blood warrants the delay.

DR. FRANK WRIGHT (Minneapolis): I would like to ask how a man is to become expert in the use of the sharp curette if he does not begin to use it until he is expert.

DR. C. M. CARLAW (Minneapolis): Why use the curette at all? In the early 90's at the old Asbury Hospital I curetted one of these cases with a sharp curette and the first thing I knew I was tickling the umbilicus. I became very much alarmed and when I saw Dr. Dunsmoor in the hall outside of the operating room I told him what I had done. He said that so long as I did not pull down a loop of intestine it was all right. That case did teach me not to use the sharp curette. I think in most cases that need curetting, completing the dilatation with a Goodell dilator and working with a sponge holder you can with safety empty the uterus and then instead of the curette roll gauze around a uterine forceps and with this curette the inside of the uterus by rotating it around in a corkscrew action. You will be surprised how easily and thoroughly you can polish the inside of the uterus with this sponge curette. Follow this cleaning by swabbing out the

uterine cavity with Skene's solution of iodine and then clean up the parts with alcohol. You will find the bleeding will stop, the uterus will contract, the temperature will drop and the patient will rapidly get well.

DR. J. F. HAMMOND (St. Paul): I think the discussion about the curette can be applied to any instrument. The scalpel is a very dangerous instrument if not used properly. I think the curette can be put in the same class. In the majority of cases, particularly in abortions before the third month, the simplest way to empty the uterus is with the curette. I quite agree with what the speaker has said about infection. I was brought up on the radical treatment, if you wish to call it that, and in the maternity hospital where I was in 1906-7 our attempt was to empty every uterus as quickly as possible. At that time Williams was preaching the use of the finger. If one or two fingers could not be inserted through the cervix we were told to incise the cervix, but that always seemed to me to be a radical procedure. As a matter of fact we never carried that out. The difficulty I had with the use of the finger was that I could not be sure that I was removing everything. So I think in early abortion, where you have decided there are no contra-indications and no infection going on, the uterus can be emptied in a conservative way by using the curette. I do not think one need use a sharp curette. It is very easy to put any curette through the uterus. Dr. Nippert's remarks remind me of Dr. Chipman, who always impressed on the students the necessity of care in the use of the curette. He once asked one of the students what he would do if the curette went through the uterus. The student said he would pull it back.

Dr. LaVake said that, if you wait, 9 out of 10 will not need any interference. That is true, but they will have a very long convalescence. After the first 3 or 4 months I think the simplest way to do is to pack the uterus and allow the uterus to expel the contents. As Dr. Rothrock has said, you will likely find the ovum in the vagina in 48 hours. In infected cases I think it is well to wait until the temperature is normal. There is another class of cases where it is urgently necessary to interfere. Where the patient is bleeding and infected. I have had two cases where that obtained. They were losing a lot of blood and were definitely infected. The question arose as to what would be conservative treatment. In these two cases I felt that the safer way would be to do a hysterectomy and I did it. That can be condemned too and it has been done, but those two cases recovered. One has to be up against a case before he can decide just what to do. I think Dr. Schulze's management of these cases has been very good. I had previously thought he followed or advocated never touching the uterus in these cases but I see he does not believe in allowing his cases to go on indefinitely.

DR. SCHULZE (in closing): I do not wish to create the impression that I curette everything. All of this work was done in my service at the Ancker Hospital where we are obliged to take whatever comes.

There are three groups of cases where we follow a waiting policy. The first group includes those women generally three months pregnant or more who

very likely have had a complete miscarriage instead of incomplete. We give them the benefit of the doubt and our further treatment is dependent on their clinical course. The second group includes those women who are running a temperature. Here we are obliged to wait, as such a patient is not a good surgical risk. The third group includes those women who, although they have no temperature, have been criminally aborted. These women are potentially infected. It is always permissible to remove plugs of placental tissue from the cervix.

Dr. Noble asked if any of these were cases of criminal abortions. To this I would reply that my estimate would be that about one-third of them are.

Dr. Rothrock inquired about the stage of pregnancy. The majority of these cases were in the first trimester. We had one case which proved fatal from the anemia following the tremendous loss of blood, but this case was not curetted.

Dr. LaVake stated the facts very aptly when he said that each man follows the method which he likes best and my preference in the matter is set forth in my paper. It is difficult to state who has become skilled in curetting a uterus, but any one who undertakes it should be careful. Dr. LaVake's choice is one of non-interference because he feels that by waiting his patients will not require interference; but other factors must be considered. How long do these patients bleed? How much do they bleed? How long are they in the hospital? Are you not exposing these patients to possible infection? I am guided by my results, which I feel have been very good.

Dr. Martin Nordland (Minneapolis) read his thesis entitled "The Larynx as Related to Surgery of the Thyroid, Based on an Anatomical Study." Numerous lantern slides were shown.

DISCUSSION

DR. GUSTAV SCHWYZER (Minneapolis): Even if a surgeon doing thyroidectomy cannot regard all the finer ramifications of the nerves, nevertheless it is very important and imperative that he knows the exact course of the nerves in his field of operation.

Dr. Nordland has shown us a number of beautiful pictures reproducing anatomical dissections he has done recently at the University of Minnesota. His work concerns in particular the superior and inferior (recurrent) laryngeal nerves. Both are cervical branches of the vagus. The vagus itself coming from the brain through the jugular foramen forms a thickening shortly after leaving the skull and this is called the ganglion nodosum. This ganglion receives motor fibers from the 11th and 12th cerebral nerves, the accessorius and the hypoglossus. Thus we have in this ganglion sensory and motor fibers. That the superior laryngeal nerve in its external branch carries motor fibers has been known to us for a long time. We know that the cricothyroid muscle, a muscle which is destined to tense the vocal cords, and the pharyngeal inferior constrictor muscle are innervated by the external branch of the superior laryngeal nerve. The pharyngeal muscles are playing an important part in the phonation.

The very special points that Dr. Nordland brings out concern the internal ramus of the superior

laryngeal nerve. In a beautiful specimen of a resected larynx he shows us that a number of branches of this internal ramus of the superior laryngeal nerve go into the interarytenoid muscle. This work corroborates the work of others.

For years we have practiced a method of ligating the entire upper horn instead of only the blood vessel running into the same. This procedure undoubtedly safeguards the superior laryngeal nerve and avoids paralysis of the cricothyroid muscle. In spite of this method, however, I remember we had cases of temporary hoarseness, the phenomenon explained here tonight. The condition just brought to our attention should not be confused with a paralysis of the vocal cords by injury to the recurrent nerve.

DeQuervain's method of ligating the inferior thyroid artery is of decided advantage. It ligates this artery at its trunk and not only one of its branches. It causes remarkable hemostasis which is striking in bleeding toxic goiters, and finally it means the safety of the recurrent laryngeal nerve, because the ligation takes place quite a bit farther out at the point where the inferior thyroid artery comes and makes a curve from beneath the common carotid.

In cases of recurring goiter, particularly in toxic goiter where we have to operate again, it is my belief that the method of ligating the inferior artery as mentioned above is liable to bring on injury to the recurrent laryngeal nerve because of the distorted anatomy. For this reason I do not consider this procedure a very safe method when operating on recurring goiter cases.

I wish to thank Dr. Nordland in the name of the Academy for his interesting pictures of the anatomical dissections he has shown us tonight.

DR. A. E. BENJAMIN (Minneapolis): I am pleased to have seen this presentation. It gives us a more vivid idea of the arterial, venous and nerve supply of the thyroid area. A number of years ago I did some dissecting in this region to determine what was the best procedure in thyroid surgery, and after witnessing operations in various parts of the United States and Europe, I decided that thyroid surgery had been made too difficult and with too much effort on the part of the operator. I then began more or less mass control by using the clamp, endeavoring to clamp the blood vessels and capsule of the upper pole and the gland tissue below, including the branches of the inferior thyroid. I then found that thyroid surgery was very easy in the majority of cases because the hemostasis was almost perfect. I always use plain catgut. I had no trouble, no hoarseness resulting, and so far have not included any nerve structure, although that may have been good luck. At any rate, this plan has obviated any of the unfortunate results in the work. I found it unnecessary to ligate every branch but dissected out the diseased portions of the lobes, then passed the sutures back and forth through the capsule and any of the gland that was left. In this way I then had a pretty clean field all the time. It has been very satisfactory. I have not yet had the boldness in many cases to ligate the artery beyond the fascia, thinking perhaps it might be that, if I disturbed the blood supply of the remaining gland tissue too much, I might have some unfortunate results.

DR. H. A. H. BOUMAN (Minneapolis): I rise to say that I have listened to Dr. Nordland's thesis not only with profit but with great pleasure and a feeling of gratitude, having known him when he was a very young man in our section of the city.

There have also some microscopical studies been made of late to determine the nature of these nerves. The vagus is not a compact cable, but is composed of numerous bundles held loosely together by connective tissue. On cross section in the neck region various kinds of fibers are seen. Some have heavy, some delicate medullary sheaths and fewer are bare axis cylinders. The laryngeals carry by far the most fibers with heavy sheaths; indeed, the recurrent seems to be made up almost entirely of these fibers, which are motor.

Regarding the ligation of the inferior thyroid. Kocher taught to tie this vessel at exactly the same place, but he did not separate the muscles to reach it before exposing the goiter, as Dr. Nordland has practiced.

DR. NORDLAND (closing): I want to thank the gentlemen for their discussion of my paper. I have nothing of importance to add. I did not intend to discuss the various advantages of the ligation of the inferior thyroid artery, according to deQuervain. The point I want to stress is that it is occasionally necessary to ligate this vessel and, when it is, I believe the anatomical factors indicate that it is an advantage to ligate it according to this method.

Dr. A. R. Hall (St. Paul) gave a report of a case of Abnormal Subclavian Arteries and showed X-ray films. (To be reported later.)
The meeting adjourned.

R. T. LaVake, M.D.,
Secretary

BOOK NOTICES

THE VOLUME OF THE BLOOD AND PLASMA IN HEALTH AND DISEASE. By Leonard G. Rowntree, M.D., and George E. Brown, M.D.; with the technical assistance of Grace M. Roth. 219 pages, illustrated. Philadelphia: W. B. Saunders Co., 1929. Cloth, \$3.00 net.

This small volume covers very thoroughly the technic and value of this rather new clinical study; and gives a practical nomenclature for the relation of blood and plasma value. In the first few chapters the choice of dye stuffs and their fates are discussed. This is followed by a detailed discussion of the various criticisms of the dye method of determining the told volume, taking up the parts played by absorption of the dye by the blood cells; the various indicators; the concentration curve for the dye and variations in mixing; the part played by the uneven distribution of erythrocytes and plasma in the different blood vessels, exercise between time of injection of dye and hematocrit reading, posture, and the variations and reliability of hematocrit readings.

The chapter devoted to technic covers fully the dye used, the injection and the reading of the hematocrit giving various methods used by other men. This shows that by repeated check-up the same or

approximate values are obtained in not only normal subjects but in similar disease conditions. In the determinations the part played by body, build, age, environmental temperature, and relation of the weight of the blood to the body weight is discussed. The remainder of the book gives us the Mayo Clinic figures of blood and plasma volume in the various diseases that have to do with the changes in the blood, as the anemias, disease of the spleen and liver; the edemas, the various vascular conditions, the endocrine disturbances and the miscellaneous conditions covering changes in the diet, pregnancy and shock and hemorrhage.

The book makes one realize that a test that at one time was very crude and inaccurate can now be made simply and accurately.

The method described here makes information previously only interesting physiological fact, now a clinically important fact.

—ADAM M. SMITH, M.D.

TREATMENT IN GENERAL PRACTICE. By Harry Beckman, Prof. of Pharmacology, Marquette University Medical School, Milwaukee, Wis. Philadelphia: W. B. Saunders Company, 1930. Cloth, \$10.00 net.

The reviewer on being requested to review this work first consented with an attitude of dignified acquiescence which feeling shortly changed to one of hearty co-operation on inspection of the contents of the book.

Dr. Beckman has succeeded admirably in accomplishing his rather difficult task. Of prime interest is the well selected group of references occupying thirty-one pages from which the author quotes extensively. In his preface he states, "The true authors of the book are those men and women whose names appear in the Bibliography—I have looked upon myself merely as an editor."

The book is as complete as possible and the presentations of controversies, which the author fears may give objections to some, seem to the reviewer to be an asset.

For the publishers, I may say that the physical "make-up" is most pleasing.

The reviewer takes great pleasure in adding his recommendation to the others which surely have been offered.

—REVIEWER

RESEARCH AND MEDICAL PROGRESS AND OTHER ADDRESSES. By J. Shelton Horsley, M.D., attending surgeon, St. Elizabeth's Hospital, Richmond, Va. C. V. Mosby Co., St. Louis, 1929. 208 pages. Cloth, price \$2.00.

This small volume is a collection of various occasional addresses before medical and lay audiences. The author makes no pretense to profound or exhaustive treatment but writes in a casual manner which suggests a thoughtful contemplation rather than an intensive study. The scientific value is avowedly and purposely not great. This is particularly unfortunate as the literary merit of these essays is hardly sufficient to sustain them. There are, however, many things of interest that are well considered and well worth the time of both physician and layman.

—A. A. ZIEROLD, M.D.

**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Myrtle C. Lee, B.S., Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Health News

THE JOURNAL-LANCET has kindly offered to the State Department of Health of North Dakota a page of this very valuable publication. Miss Myrtle C. Lee, B.S., Statistician and Director of our Bureau of Vital Statistics, has been appointed Editor-in-chief. This is our first issue. It is planned to include such items of news and comments on public health activities of the North Dakota Department of Health as will be of interest to the medical profession and health officers of the North Central States in general and North Dakota in particular. She will greatly appreciate suggestions and news items on local health activities.

Health Officer's Meeting

The Sixth Annual Conference of the North Dakota Health Officers' Association will be held at Grand Forks, May 6th and 7th. An interesting and instructive program has been arranged. A. E. Bostrom, M.D., Epidemiologist at the South Dakota State Department of Health has kindly consented to read a paper. An invitation to attend the meeting is extended to all readers of THE JOURNAL-LANCET.

Admission to Morbidity Registration Area

The United States Public Health Service has decided to establish a morbidity registration area for the United States, to become effective July 1, 1930. The North Dakota State Department of Health has made application for admission as a State Unit. The standard required is 75 per cent registration for six major diseases, viz.: Typhoid Fever, Smallpox, Diphtheria, Scarlet Fever, Tuberculosis, and Infantile Paralysis. The test will be made by a house to house canvass covering 1 per cent of our population and will begin April 1st. We think we will win but will need the full co-operation of every physician. We cannot afford to lose.

Malta Fever or Undulant Fever

The following letter was received by the State Department of Health from the United States Public Health Service Hygienic Laboratory, Washington, D. C.:

"I have your letter of February 13th, in which you ask for information in cases that give agglutination of *Brucella abortus* in low dilution but show no clinical evidence of undulant fever. Such results are obtained frequently and probably are the result of receiving small doses of *Brucella abortus* at frequent intervals, either by ingestion in milk, or by contact with infected animals, as in the case of veterinarians.

"A positive agglutination test should be supported by clinical symptoms in order to establish a diagnosis of undulant fever. We have recently seen one case that gives a positive agglutination in 1:320 dilution but is feeling perfectly well at the present time. A year or two ago he suffered with rather vague symptoms that were probably due to abortus infection, and he also has the infection present in his cows. Such cases cannot always recall past symptoms.

"It seems to be the consensus of opinion of laboratory workers that positive agglutination tests are the result of receipt of abortus infection though many may be in doses too small to result in clinical cases of the disease."

Signed—G. W. McCoy, M.D., Director,
U. S. Public Health Service
Hygienic Laboratory.

"Physician's Bedside Records"

A vest pocket size booklet for birth and death records has been sent to the physicians of the state. The Bureau of Vital Statistics hopes that physicians will form the habit of making complete records at the time of birth or death, so that certificates made out after return to the office will be complete and accurate. The booklet also gives instructions as to how each question on the certificates should be answered. The inside of the back cover gives an obstetric calendar which is easy to use.

Water Supplies in North Dakota

In a state where the rural population exceeds 75 per cent, public water supplies are available to 174,000 people or 21 per cent of the total population in the state. Of the 110 municipalities having water works systems, 93 secure their supplies from ground water sources and 71 of these communities, comprising a population of 83,500, derive their supplies from drilled wells. This population comprises practically 48 per cent of the population having public water supplies available. Eleven surface supplies alone supply 39 per cent of the population having public water supplies available.

Furthermore, it is conservatively estimated that 75 per cent of the state's population not served by water works systems secure their water supplies from drilled wells, making a total population served by drilled well water supplies approximately 435,000, or 67 per cent of the total population of the state.

May Day

The celebration of Child Health Day on May 1st is being urged this year by the Division of Child Hygiene in order to co-ordinate its activities with those of other states. Organizations of women are asked to co-operate in making this year one of special interest and education in child health. Parent-Teacher Associations, Gold Star Mothers, Legion Auxiliaries and Federated Clubs are taking an active part in distributing information, holding immunizing clinics and pre-school child conferences. School talks, pageants and radio programs are being sponsored to stimulate interest and secure results in after care.

"Who's Who in Public Health"

The State Department of Health will elect each quarter the most outstanding public health officer in the state to receive the honor of special mention under this caption. The name for the first quarter has already been chosen. A short biographical sketch and his outstanding activities will appear in our next issue.

Registration Contest

McKenzie County, North Dakota, won the birth registration contest for 1929. They increased their registration 36 per cent besides receiving high scores for the other counts in the contest. The cup will be forwarded as soon as it is engraved.

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MINNEAPOLIS, APRIL 1, 1930

"COPPER HEARTS"

In an article written for the *Minneapolis Tribune* by E. E. Free, Ph.D., called "Copper Hearts," the doctor of philosophy shows us the amount of metals that may be contained in the different organs of the human body. For instance, the heart contains copper, aluminum and a little silver. The brain is rich in tin (the editor laughs while he dictates this because he has seen so many tin brains that no one knew about)! Another combination is that of cobalt and nickel, which the body contains and concentrates in the pancreas, the gland which contains insulin and makes it possible for people to eat sugar as food. This is all new to the editor, so he is asking our readers to draw their own conclusions. But it is not so difficult to imagine a man with a lot of nickel in his pancreas—but why not slip it into his pocket? Perhaps this condition is the cause of hard times out here. Anyhow, any excuse will go for a while. But aluminum, one of the most widespread elements in nature and which must be absorbed in considerable quantities all the time by the body's digestive system, is found by the French investigators in the lungs, the kidneys, and the two adrenal glands. A trace of aluminum is also found in the heart.

It has been shown by experiments carried out at Johns Hopkins University, by Professor Bur-

ton E. Livingston and Dr. Sam F. Trelease, that where small traces of copper and several other metals have been added to the food solution in which wheat plants were grown it had the faculty of stimulating markedly the growth of these plants. Here may be an important discovery, at least it will enliven *the addition of mineral plant life*. However, traces of metals like silver in the heart, copper in the liver or tin in the brain may be equally important. The commonest of all these various metallic substances are copper and silver.

Would it not be worth while to come back here fifty or a hundred years from now and see what growth and development has done for the hundred years just past?

THE SHORTAGE OF PHYSICIANS

The writer was very much surprised in looking over the *Boston Evening Transcript* a few weeks ago to find that seventy-eight towns in Massachusetts are without physicians. That means that other towns are in similar straits.

New England, then, faces a growing shortage of family doctors. That should not happen in the Middle West or the extreme West; of course there are many miles of country between the Middle West and the West that are without any physician and the cry of the *Boston Evening Transcript* was for assistance in establishing the New England Center and restoring the family doctor, and to that end they are asking for funds for the Center at 100 Milk Street, Boston.

The time has not come in the Middle West when there will be a shortage of doctors; judging from the list in the *American Medical Association* directory there seems to be a host of physicians scattered over the country, the midwestern, central and extreme western states. It is a very good plan, however, to educate physicians in several branches of medicine so that they may have a working knowledge of all the subjects. Then, after a time, when the physician is well started in his work, and it takes a long time for a man to establish himself, he can branch out into a specialty if he is fitted for it—but until he is he should practice general medicine. The difficulty is that many men will decline to become old-fashioned doctors because they feel they can make more by specializing.

Dr. Musser, who was here in attendance at the meeting of the American College of Physicians, said that the physician's interest lies in absorption of the patient's cash resources in hospital costs. How few men have laid by a sum-

to protect them or tide them over in a case of illness. The men and women who save something out of their incomes are very few, and what they have is absorbed with rapidity, or, as is many times the case, they pay only part of their bill for medical care and service. But, again, the world is changing and the installment plan of purchasing almost everything carries even into reimbursement for medical care. We are reminded of the story we read the other day of the boy who, when asked what he would do if he had four dollars, replied that if he had four dollars he could buy a radio, an automobile, and a new suit of clothes. Well, it is possible and that is apparently the way the world is looking at things—on the installment plan. How many who are buying automobiles and radios on the installment plan can pay for them except under the most favorable circumstances and over a long period of time,—and yet they are encouraged to make their purchases this way. If they are taken sick in the interim, or are thrown out of employment, they are, of course, unable to pay for medical care. It is a fine way to do business, but, in the end, does it pay?

DR. WILLIAM HOUSE

Word has just been received through the Portland, Oregon, *Daily Journal* of the death on Thursday night, March sixth, of Dr. William House.

Doctor House was born in 1873 at Ellenville, New York, and graduated from the Buffalo Medical School in 1895. He served in the University of Oregon Medical School, was president of his various societies in proper time, and for the last ten years has been associate editor of the *Northwest Medicine*, a medical publication. He leaves a widow and two daughters, Mrs. Walter Pittman Ramsey, of San Diego, and Mrs. Frank Flint Dickson, of Portland, as well as several brothers and sisters in the East.

The editor was very fortunate in knowing this fellow neurologist, Dr. House, for a number of years and it was always with great pleasure and profit that he met him when in attendance on medical societies. Dr. House, as well as others, has made his reputation partly on his capabilities in court as an expert witness; he was a very fair and fine-minded man and he enjoyed a large practice in Portland.

We regret, as do others of the medical profession and neurologists in particular, the death of this man of high type. Dr. House has been

chairman of the Section of Nervous and Mental Diseases of the American Medical Association, and has written many articles of interest to the neurologist. We extend the sympathy of all northern neurologists to the bereaved wife and family.

NEWS ITEMS

Dr. E. H. Smith was reappointed as city health officer of Bemidji, Minn.

Dr. and Mrs. S. Marx White, of Minneapolis, have returned from Florida where they spent a month.

Dr. Sarah Brockway, 85 years old, a pioneer resident of Sioux Falls, S. D., died at her home March 13.

Dr. F. M. Poindexter was appointed City Health Officer of Dillon, Montana, to succeed the late Dr. M. A. Walker.

Dr. Jean T. Lapierre and Dr. Leo Murphy, Minneapolis, have sailed from New York recently on a four months trip abroad.

Dr. D. A. Gregory and family, of Miller, S. D., are moving to Milbank, S. D., and the doctor will soon take up the practice of medicine there.

Dr. Alva A. Conley, Cannon Falls, Minn., died in Chicago, March 11, while he was there taking some special work relative to his profession. Dr. Conley was 40 years old at the time.

Dr. F. A. Smartwood, pioneer physician of Waseca, Minn., is beginning his first vacation in forty years, March 15, by taking a holiday trip to Chicago, Ill., and Hot Springs, Ark.

Dr. A. V. Rock, physician and city officer of Mobridge, S. D., suffered cuts and bruises when his car catapulted off the highway last month. Dr. Rock was answering an emergency call at the time.

Dr. John A. Urner, of Minneapolis, was a speaker of the Stutsman County Medical Society meeting, February 24. Dr. Urner's subject of the evening was "Cancer." The meeting was held at Jamestown, N. D.

Dr. Erling S. Platou, of Minneapolis, has been elected president of the Northwest Pediatric Society. Dr. E. D. Anderson, of Minneapolis, is vice-president and Dr. F. G. Hedestrom, of St. Paul, secretary-treasurer.

Dr. J. P. Greaves, who once practiced in

Sherwood, N. D., has made plans to open practice in Great Falls, Montana. Since leaving Sherwood a few years ago, Dr. Greaves has been studying in New York.

Dr. O. F. Mellby was elected president of the Physicians Hospital at a meeting of the Board of Directors in Grand Forks, N. D. Dr. J. Beiderman was vice president and Dr. H. W. Froelich, secretary-treasurer.

Dr. A. B. Rosenfield has returned from Chicago to reopen his office in Pequot, Minn. Dr. Rosenfield completed his postgraduate work in which he specialized in infant feeding and in diseases of children and obstetrics.

Dr. George L. Routlege, of Twin Bridges, Montana, has accepted the post of attending surgeon at the Barnett Hospital staff, of Dillon, Mont., and expects to remove with his family to that city within the next week.

Dr. Lorenzo A. Gray, age 31, passed away at Fairmont, Minn., February 27. His death was due to paralysis which followed an attack of sleeping sickness. Dr. Gray was graduated from the University of Minnesota in 1923.

Dr. E. E. Zemke, of Fairmont, Minn., will be associated with Drs. Hunt there April 1st. Dr. Zemke was graduated from the University of Minnesota Medical College and has been on the staff of St. Mary's Hospital at Duluth.

Dr. Henry E. Webster, age 68, Duluth physician since 1895 and former City Health Officer, died March 7, at his home in Duluth. Dr. Webster was 68 years old when he died and graduated from the University of Toronto in 1884.

Dr. L. A. Sukeforth, City Health Director of Duluth, was honored by the appointment of the American Public Health Association on its official delegation which will attend the 1930 International Hygiene and World Health Congress at Dresden.

Dr. G. Kertesz, of Arlington, Minn., has sold his practice there to Dr. T. P. Martin, of Garry, S. D. Dr. Keretsz and family are leaving for Europe, in April, where Dr. Kertesz will take postgraduate work in Budapest and Vienna. They expect to be gone about one year.

Dr. Kenneth Onsgard, son of Dr. L. Onsgard, will arrive in Houston, Minn., on or about April 1, to assist his father in his practice there. Dr. Onsgard, Jr., attended St. Olaf's College and the University of Minnesota where he received

his degree in the College of Medicine.

Dr. Howard C. N. Naffziger, of San Francisco, a brain specialist and former Professor of Surgery at the University of California, was the guest of honor at the banquet given by the Silver Bow Medical Association of Montana, March 7. Dr. Naffziger was visiting in Butte on professional duty.

Dr. Frederic W. Schlutz, head of the department of pediatrics at the University of Minnesota Medical School, will leave Minneapolis, April 1, to assume his new duties as chief of the department of pediatrics of the newly organized medical school at the University of Chicago. Dr. Schlutz has been a member of the University faculty here for 20 years.

Dr. W. L. Dayton, of Lincoln Neb., who served six years as treasurer of the American Academy of Ophthalmology and in 1917 was its president, died in a hospital in Lincoln, Neb., February 28. Dr. Dayton was a resident of Lincoln for forty years and long prominent in professional circles. He was graduated from the Northwestern University in 1881 and was 73 years old at the time of his death.

Dr. A. T. Mann was elected president of the Minneapolis Surgical Society at the meeting, March 7, held at the General Hospital. He succeeds Dr. S. R. Maxeiner. Dr. T. H. Sweetser was named vice president and Dr. H. O. McPheeters was continued as secretary-treasurer. Dr. J. M. Hays was elected to the council for a five-year term and Dr. Owen Wangenstein was named for four years to fill the unexpired term of Dr. Sweetser. Other members of the council are Dr. R. C. Webb, Dr. W. D. White, Dr. E. C. Robitshek and Dr. Maxeiner. Dr. M. J. Lynch is the retiring vice president.

MEDICAL BROADCAST FOR THE MONTH The Minnesota State Medical Association Morning Health Service

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Wednesday morning over station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters).

Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota.

The program for the month of April will be as follows:

- April 2—Cancer Cures.
- April 9—White vs. Brown Bread.
- April 16—Safeguarding Motherhood.
- April 23—Code of Medical Ethics.
- April 30—Inflammation of Mastoid Bone.

Official Call to the Officers, Council, House of Delegates and Committees of the South Dakota State Medical Association

The Forty-ninth Annual Session of the House of Delegates will convene May 20, 1930, at 2:00 P. M., Cataract Hotel, Sioux Falls, S. D.

All Delegates will procure credentials from the Secretary of their Component Society, and present same to the credential committee.

Each Councilor will make a report of the condition within his district, as prescribed by the By-Laws. Please make same in triplicate.

Delegates and committees having reports, resolutions or memorials to be considered by the House of Delegates, will please present the same in triplicate in order that they may be referred to the proper reference committee, for their recommendations to the House of Delegates.

It is desired that the Secretaries of the Component Societies attend the meetings of the House of Delegates. This contact will be helpful in presenting such problems as may be of interest to their Society.

Fraternally,

L. N. GROSVENOR, M.D., President
FRED TREON, M.D., Chairman Council
J. F. D. COOK, M.D., Secy.-Treas.

**THE FOURTH ANNUAL PRIZE OF
\$250.00**

WILL BE AWARDED BY THE

Minnesota Society of Internal Medicine

"to the practicing physician, exclusive of Members of this Society, in the State of Minnesota who has been deemed most worthy to receive a prize in research in clinical medicine."

:::~

All physicians who are in active practice and who are legal residents of Minnesota may become candidates for the award. Physicians employed in government service are eligible if their legal residence is the State of Minnesota. Physicians who are whole-time teachers in teaching institutions may not become candidates for this prize.

All inquiries should be addressed to, and theses should be submitted to the committee before October 1, 1930.

E. T. F. RICHARDS, *Chairman*
Hamm Building
St. Paul, Minnesota

Prize for 1927 awarded to:
Dr. Adolph Hansen, Faribault, Minn.

Prize for 1928 awarded to:
Dr. Max Seham, Minneapolis, Minn.

Prize for 1929 awarded to:
Dr. Hilding Anderson, Duluth, Minn.

MISCELLANY

We believe the following article, appearing in the *Elizabeth City (N. C.) Independent* and copied in the February issue of *Hygiea*, will afford some amusement to our readers of the medical profession:

**A CHIROPRACTOR DISPLAYS HIS
LEARNING**

Doctors Peterson and Peterson, male and female, chiropractors, came to this newspaper this week to advertise the opening of offices for the practice of their cult. They wanted a write-up as well. They were informed that this newspaper had no faith in chiropractors and would give them no write-up.

Said the Dr. Peterson who wears pants: "Do you believe in medical doctors? Do you know that in 5,000 years medical doctors have developed only one specific, quinine?"

"I should say they have done a bit better than that," replied the editor. "Would you not regard insulin as a specific?"

"Certainly not," said the Dr. Peterson who wore pants. "I can tell you about case after case of dropsy in which insulin failed."

"But insulin is not indicated in dropsy," said the editor.

"I mean Bright's disease," said the Peterson who wore pants.

"But insulin is not used in Bright's disease," exclaimed the editor.

The Dr. Peterson who wore skirts interrupted to prompt the Dr. Peterson who wore pants. "You mean diabetes," she prompted him.

"Well, diabetes and Bright's disease are the same thing," said the Dr. Peterson who wore pants.

That was too much for the editor of this newspaper. Rising out of his seat he denounced the Dr. Peterson in pants as a quack.

And so we have with us another firm of chiropractors in Elizabeth City, the head of which doesn't know that there is as much difference between diabetes and Bright's disease as there is between kidney colic and an ulcer of the liver. And they come to treat ailing human beings and separate them from their money.

—*Elizabeth City (N. C.) Independent.*

TORCHES

Between sunrises the other day two men died. One of them was young, just turned thirty; the other nearly thrice that age. In their respective callings both were preëminent. The young man's death assumed the proportions of a national tragedy

while, save for some serious-minded commentators, the old man's death was scarcely noticed.

Like the older man, the younger might also be called an educator. His classes were as wide as the world! his rostrum was the movie screen; and his subject was—sex. He took life's oldest, strongest and most turbulent emotion, presented it passionately and vividly, and his pictures had a tremendous popular appeal. Thus he coined a name for himself which denoted that he was a past master in the exposition of his subject. It was not merely the dominant theme of his art but of his life. He had figured in two divorces before he was thirty, and was, according to report, about to be married for the third time.

When he died a nation literally stood beside his bier. Even in St. Paul the newspaper telephones were burdened with inquiries about him. In his New York hospital a special corps of operators was assigned to the duty of answering those who called. After his death people were injured in the mobs which surrounded the building in which his body lay.

The old man's province was the province of the mind. To the end of a life of extraordinary length he ruled it absolutely. Few cared how much money he made; fewer cared what he looked like. In his material aspects he was unimportant. But everybody who correctly appraised him cared very deeply what he thought and what he said. For more than fifty years he taught young people—not to cultivate their emotions but to cultivate their minds. His concern was not with their bodies but with their intellects. While the young man, consciously or not, reminded us of our kinship with the animals, the older as constantly reminded us of our kinship with God. Yet, in the sense that the younger man had it, the older entirely lacked public appreciation. The serenity of his last hours was not disturbed by the bawling of the morbid. No hysterical mobs fought for the strange privilege of seeing him in death.

Which seems to suggest the upsetting conclusion that there is something very wrong indeed with our appraisal of human values; that in this instance the popular estimation of two prominent men was hopelessly awry.

But it is worth asking whether this is really so, or whether it merely seems so. Those who deal with humanity in the mass know that there is a facile road to a certain sort of success through appeals to the primitive emotions. The news writer is not surprised at such popular reaction as have attended the funeral obsequies of this young man. He would have been surprised only if the conditions had been reversed, and if the windows of the funeral chapel had been broken by mobs crowding about the death scene of the aged educator. That would not be human nature, drunk with its emotions.

But between human nature, drunk with the emotion of the moment, and human nature in sober perspective there is the same difference as between the two Phillips. Nothing is so surely mortal as a fame resting upon the celebration of the animal in man; nothing is so surely immortal as a fame based upon the triumphs of the mind. The beauty that launched a thousand ships is forgotten while the intellects of a Plato and a Socrates live on. Shakespeare endures while Nell Gwynn is a fragile

remembrance. There will be a five-foot shelf of immortal books long after mankind has forgotten the very word which described the actor's fame. Human beings, when all is said and done, set their real store by those pursuits, interests and achievements which give life its calmest happiness and its deepest satisfactions; and which, by their power to endure, endow us with a measure of immortality.

Platitudes these, perhaps; platitudes sometimes fiercely denied by that flaming youth of which so much is heard nowadays. But it is worth while, nevertheless, to remind ourselves that youth does not flame forever; and that the most enduring torches—those upon which mankind must rely to light its future path—are the torches kindled at the altars of the mind.

CLASSIFIED ADVERTISEMENTS

Exercising Machine for Sale

Exercising machine never been used will be sold for half of list price. Address 669, care of this office.

Locum Tenens Wanted

Experienced physician desires locum tenens for a few months. Licensed in Minnesota. Address 702, care of this office.

Wanted

Physician registered in South Dakota for locum tenens, during month of July, in Black Hills town. Address 701, care of this office.

Ultraviolet Ray Lamps for Sale

Three Ultraviolet Ray Lamps. All brand new and will be sold at half price. Description and prices can be had by addressing 668, care of this office.

Position Wanted

Young girl would like position in doctor's or dentist's office. Good education and neat appearance. Free to accept position at once. Address 704, care of this office.

Location Wanted

Physician and Surgeon, graduate of University of Minnesota, has had hospital experience. Willing to buy equipment. Free after July first. Address 696, care of this office.

Physician and Surgeon Wanted

A man to do general practice of medicine and some surgery for May, June and July, in South Dakota town. Recent graduate preferred. Liberal offer. Address 698, care of this office.

Location Wanted

Laboratory technician would like to locate in Minneapolis or Montana or Dakotas. Can do general laboratory work, blood counts, blood chemistry, cultures and smears, basal metabolism, electric cardiogram, tissue work, and Kahn tests. Free to locate after March 15. Address 693, care of this office.

Physician Wanted

Young graduate to do Locum Tenens for four months. Beginning in April. Town of 850 in western North Dakota, no opposition; big territory. Possibility for permanent association. Address 699, care of this office.

For Sale

General and surgical practice in small Wisconsin city. Hospital facilities for surgery. Good dairying community. Modern seven room house and office equipment including X-ray. Terms. Introduction. Address 703, care of this office.

Wanted—Locum Tenens Work

General practice, in North Dakota, Minnesota, Iowa or Illinois, during the coming spring and summer, by an experienced and well-qualified physician of correct habits and good reputation. Address Box 685, care of this office.

Position Wanted

X-ray technician and physio-therapist with experience. Can do bookkeeping, shorthand, dictaphone, typing. Experience in Minneapolis hospitals and clinics. Will accept temporary work. Moderate salary. Address 692, care of this office.

Wanted—Physician and Surgeon

To take over general practice for about four months. Must be well qualified for general practice and surgery. Furnished home available for married man. Must be ready to start about May 15. Address 697, care of this office.

Physician Wanted

To assist in private hospital. Must be under 35 years old and willing to work. Splendid opportunity for permanent connection. Salary to start between \$200 and \$300 according to experience. Address 700, care of this office.

EXAMINATION REPORT, MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

OCTOBER, 1929

BY EXAMINATION

Name	School and Date of Graduation	Address
Carlson, John Victor	U. of Minn., M.B., 1929	St. Luke's Hospital, Duluth, Minn.
Cox, Forest William	U. of Pa., M.D., 1925	101 Hillside Apts., Rochester, Minn.
Dewey, Donald Herbert	U. of Minn., M.B., 1928	West Bridge St., Owatonna, Minn.
Eley, Edward McClintock	U. of Minn., M.B., 1928	Box 162, Glenwood, Minn.
Feldman, Floyd Melvin	U. of Minn., M.B., 1929	Ancker Hospital, St. Paul, Minn.
Gleason, Wallace Anselm	U. of Minn., M.B., 1929	St. Luke's Hospital, Duluth, Minn.
Grunke, Erwin Henry	U. of Minn., M.B., 1928	2261 Gordan Ave., St. Paul, Minn.
Hanson, Lewis	U. of Minn., M.B. and M.D., 1929	Fairview Hospital, Minneapolis, Minn.
Harper, Frederick Richard	U. of Mich., M.D., 1927	Mayo Clinic, Rochester, Minn.
Harrington, Bernard Daniel	U. of Minn., M.B., 1928; M.D., 1929	Glen Lake San., Oak Terrace, Minn.
Iber, Frank C.	U. of Cincinnati, M.D., 1924	612 7th Ave. S. E., Rochester, Minn.
Johnson, Elmer Theodore	U. of Ill., M.D., 1929	1928 W. Superior St., Duluth, Minn.
Kilgard, Frank Milton	U. of Ill., M.D., 1929	Clear Lake, Minn.
Lamont, John G.	Trinity Univ., M.D., 1895	c/o St. Louis County Sanatorium, Nopeming, Minn.
Lende, Norman	U. of Minn., M.B., 1928	Faribault, Minn.
Lundblad, Roy August	U. of Minn., M.B., 1928	4800 Nicollet Ave., Minneapolis, Minn.
Neumayr, George Hugo	Rush, M.D., 1928	2199 St. Clair St., St. Paul, Minn.
Paton, Walter Mudie	U. of Toronto, M.B., 1924	Mayo Clinic, Rochester, Minn.
Phillips, John Roberts	U. of Maryland, M.D., 1927	103 4th Ave. N. W., Rochester, Minn.
Riordan, Elsie Margaret	U. of Minn., M.B., 1929	3003 Nicollet Ave., Minneapolis, Minn.
Rydell, William Birger	Harvard, M.D., 1929	St. Luke's Hospital, Duluth, Minn.
Sellers, Galen Krauth	U. of Ill., M.D., 1929	112 W. 36th St., Minneapolis, Minn.
Serrurier, Laurence Roland	U. of Oregon, M.D., 1927	Mayo Clinic, Rochester, Minn.
Stafne, William Arnold	U. of Minn., M.B., 1928	Moorhead, Minn.
Zemke, Erhart Edmund	U. of Minn., M.B., 1929	Fairmont, Minn.

BY RECIPROCIDTY

Bullard, Mattie Jane	Rush, M.D., 1928	Stud'ts' Health Serv., U. of M., Mpls.
Collins, Donald Clark	U. of Calif., M.D., 1927	Mayo Clinic, Rochester, Minn.
Cremer, Annabel Beatrice	Marquette, M.D., 1929	State Hospital, Rochester, Minn.
Elofson, Carl Elof	U. of Kansas, M.D., 1929	St. John's Hospital, Fargo, N. D.
Ghormley, Ralph Kalb	Johns Hopkins, M.D., 1918	Mayo Clinic, Rochester, Minn.
Gushurst, Edward George	Northwestern, M.D., 1921	1937 Aldrich Ave. S., Minneapolis
Morgan, Sherburne Francis	Marquette, M.D., 1927	Francis Drake Hotel, Minneapolis
Rider, Albert Sparr	Rush, M.D., 1900	Flandreau, S. D.
Shane, James Howard	Harvard, M.D., 1927	Mayo Clinic, Rochester, Minn.
Stewart, Gwendolyn	Coll. Med. Evangelists, M.D., 1921	Station A, Faribault, Minn.

NATIONAL BOARD CANDIDATES

Cameron, Markley Connell, Jr.	U. of Pa., M.D., 1927	219 6th Ave. S. W., Rochester, Minn.
Goldberg, Samuel Lewis	Rush, M.D., 1928	Mayo Clinic, Rochester, Minn.
Zillessen, Frederick Otto	U. of Pa., M.D., 1926	Mayo Clinic, Rochester, Minn.

EXAMINATION REPORT, MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

JANUARY, 1930

BY EXAMINATION

Name	School and Date of Graduation	Address
Anderson, Philip Andrew	U. of Minn., M.B., 1928; M.D., 1929	11 Nourse St., St. Paul, Minn.
Arlander, Clarence E.	U. of Minn., M.B., 1929	General Hospital, Minneapolis, Minn.
Barnet, Emmanuel Green	U. of Minn., M.B., 1929	St. Joseph's Hosp., St. Paul, Minn.
Benson, Theodore Quentin	U. of Minn., M.B., 1929	515 Delaware St. S. E., Minneapolis
Berghs, Lyle V.	U. of Minn., M.B., 1928; M.D., 1929	Owatonna, Minn.
Bjelland, Paul A.	U. of Minn., M.B., 1929	200 Oak Grove St., Apt. 206, Mpls.
Church, Gerald T.	Syracuse Univ., M.D., 1927	Mayo Clinic, Rochester, Minn.
Cummings, William G.	U. of Minn., M.B., 1928; M.D., 1929	Glen Gables, Park Ave., Glencoe, Ill.
Decker, Fred Henry	Rush, M.D., 1927	Mayo Clinic, Rochester, Minn.
Gregory, Raymond Leslie	U. of Minn., M.B., 1929; M.D., 1929	General Hospital, Minneapolis, Minn.
Harris, Milo Truman	U. of Texas, M.D., 1928	Ancker Hospital, St. Paul, Minn.
Holte, Herman James	U. of Minn., M.B., 1929	3707 Columbus Ave., Minneapolis
Hyde, Theodore Lincoln	Harvard, M.D., 1927	1301 1st St. S. W., Rochester, Minn.
Jolin, Raymond Voigt	Rush, M.D., 1929	Lake Park, Minn.
Kath, Reinhard H.	U. of Minn., M.B., 1929	Ancker Hospital, St. Paul, Minn.
Kidder, Earle Elton	Northwestern, M.D., 1923	Rood Hospital, Hibbing, Minn.
Kingston, James Richard	U. of Minn., M.B., 1929	Abbott Hospital, Minneapolis, Minn.
Kullman, Harold John	Detroit Coll. of Med., M.B., 1926; M.D., 1927	Mayo Clinic, Rochester, Minn.
Lenz, Joseph R.	U. of Minn., M.B., 1929	General Hospital, Minneapolis, Minn.
Leonard, Samuel	U. of Minn., M.B., 1929	University Hospital, Minneapolis
Manaugh, Hursel Conway	U. of Minn., M.B., 1929	527 5th Ave. S. E., Minneapolis, Minn.
Michie, Thomas Campbell	U. of Alberta, M.D., 1926	603 1st St. S. W., Rochester, Minn.
Morey, John Barnhart	U. of Buffalo, M.D., 1927	1201 1st St. S. W., Rochester, Minn.
Neilsen, Harold F.	U. of Minn., M.B., 1929	102 19th St. E., Minneapolis, Minn.
Nelson, Carl Barton	U. of Minn., M.B., 1929	Swedish Hospital, Minneapolis, Minn.
Onsgard, L. Kenneth	U. of Minn., M.B., 1929	Fairview Hospital, Minneapolis, Minn.
Perkins, James Eliab	U. of Minn., M.B., 1929	Ancker Hospital, St. Paul, Minn.
Russeth, Arthur N.	U. of Minn., M.B., 1929	3012 Lyndale Ave. N., Minneapolis
Shimonek, Stewart Wenzel	U. of Minn., M.B., 1928; M.D., 1929	95 N. Lexington Ave., St. Paul, Minn.
Smith, Archie Merle	U. of Minn., M.B., 1929	5052 Vincent Ave. S., Minneapolis
Sullivan, Ralph Raymond	U. of Minn., M.B., 1929	619 11th Ave. S. E., Minneapolis
Telford, Vernon John	U. of Minn., M.B., 1929	St. Mary's Hospital, Duluth, Minn.
Thornton, Harold Clive	Emory Univ., M.D., 1926	Mayo Clinic, Rochester, Minn.
Webster, William Welch	U. of Neb., M.D., 1928	Leland Apartment, Rochester, Minn.
Whalen, Maurice Leo	U. of Minn., M.B., 1929	St. Luke's Hospital, Duluth, Minn.
Wharton, George K.	U. of Toronto, M.B., 1927; M.D., 1928	Mayo Clinic, Rochester, Minn.
Zinn, Charles J.	U. of Pa., M.D., 1927	Mayo Clinic, Rochester, Minn.

BY RECIPROcity

Cottam, Geoffrey I. W.	U. of Iowa, M.D., 1926	Miller Clinic, Hamm Bldg., St. Paul
Manley, Louis Vincent	St. Louis U. Sch. of Med., M.D., 1924	Albert Lea, Minn.
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THYROID CLINIC*

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CLEVELAND, OHIO

We are living in the era of preventive medicine, and among other problems, the problem of preventive treatment in diseases of the thyroid gland is of especial importance to the general practitioner. Can we, by co-operation with him, decrease the number of cases submitted to surgery? Pathological conditions of the thyroid gland are increasing noticeably in this country. Regions from which no goiters were reported in the past now present cases of simple, toxic, and exophthalmic goiters as well as adenomas. Each year we see possibly three thousand goiters, probably 75 per cent of which are toxic.

The first subject to be considered is simple goiter in children which is very prevalent, especially in the region of the Great Lakes. Kimball and Marine have made some outstanding investigations in this field, and Tihen and Mason have published the results of a survey of 4,000 school children, studied in groups of 2,000 each. In the first group, sodium iodide was used, ten doses of three grams each being administered twice a year. At the beginning of the experiment, 57 per cent of the children in this group had demonstrable enlargement of the thyroid. In not a single case of the remaining 43 per cent did an enlargement develop during the period of observation, while in 38 per cent of the

cases in which an enlargement was already present, the gland decreased in size. Induced hyperthyroidism appeared in only 5 per cent of the cases treated with sodium iodide, and in these the symptoms disappeared when the iodine was discontinued.

In the control group of 2,000 children who received no medication, a definite goiter developed in 16 per cent of the cases in which the thyroid was normal at the time of the initial examination.

In Seattle, the incidence of simple goiter has fallen from 25 per cent in 1915 to 4 per cent in 1926. This shows, beyond a doubt, that iodine as a preventive of goiter in children is here to stay.

Iodine medication may be continued in small doses during adolescence. For this purpose, iodostarin tablets, each of which contains 10 mg. of iodine, are recommended, the dose being one tablet a week during the school age.

In the presence of simple goiter in the pregnant mother, small doses of Lugol's solution or four iodostarin tablets should be given weekly during the pregnancy. For hyperthyroidism, five milligrams of Lugol's solution should be administered daily during alternate months for the period of gestation.

By these preventive measures, the incidence of simple goiter in children can be diminished.

Dr. Malloy was kind enough this morning to

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show me practically every type of thyroid pathology we see in Cleveland.

CASE 1.—This patient is a little girl five years of age. The mother has no evidence of goiter and is therefore not an etiologic factor in the production of simple goiter in this child. From the history we are unable to elicit any symptoms of hyperthyroidism—nervousness, palpitation, increased excitability, or tachycardia. On examination, we find a fullness in the neck, especially over the isthmus. There is no evidence of increased activity or exophthalmos. This child should receive 10 mg. of iodine a week from now until the age of puberty. With this treatment the enlargement will practically disappear in six months. Thyroid extract is occasionally advised in cases of this nature, but it is a dangerous drug to use. We have seen induced hyperthyroidism develop following its administration.

CASE 2.—This girl, 13 years of age, likewise does not present symptoms or signs of hyperthyroidism. She has quite a marked enlargement of the thyroid gland. Palpation reveals a soft, diffuse enlargement of the thyroid with no evidence of increased activity. A thrill or bruit over the superior poles cannot be elicited. In the absence of nervousness, tachycardia, increased excitability, exophthalmos, and tremor, I would again recommend iodine medication; and as in case 1, the enlargement of the thyroid will gradually disappear.

Occasionally, an adult patient on being examined will say, "But, doctor, I have no goiter," meaning that the enlargement has not been noticed. It is impossible to estimate accurately the size of the underlying thyroid by palpating the neck. However, there is one step that is of considerable assistance in making the diagnosis. In reality, the thyroid has only one attachment, that to the tracheal rings. As Lahey states, the two lateral lobes float free as the wings of a butterfly, the body of the butterfly corresponding to the part of the thyroid that is fixed. Thus, by palpating the lateral lobes, the size of the goiter can be judged. When the patient turns the head to one side and elevates the chin, the sternocleidomastoid muscle is relaxed on the palpated side. Then, by placing one finger behind this muscle and exerting pressure against the external plate of the laryngeal cartilage, the trachea covering the body of the thyroid can be pushed to one side, and by displacing the lateral lobe, the thyroid can be pal-

pated between the fingers and felt to move up and down as the patient swallows. If pressure is exerted against the trachea instead of the external plate of the laryngeal cartilage, the trachea collapses and the examination is fruitless. Although the enlargement of the thyroid is apparent on only one side of this patient's neck, by using the technic described above, a fairly moderate enlargement is discernible on the opposite side. The thyroid gland in this child is rather firm, a type which does not respond to iodine quite so well as does the soft, diffuse enlargement.

CASE 3.—This patient, a girl 17 years of age, has noticed an enlargement of the neck for at least two or three years. The neck has shown a fullness as long as she can remember. There is no history of nervousness, excitability, excessive perspiration, palpitation, or increased prominence of the eyes. Symptoms of hyperthyroidism—tachycardia, tremor, exophthalmos, moist skin, etc.—are not present. The thyroid is diffusely enlarged. No bruit or thrill can be elicited. The basal metabolic rate is minus six.

The determination of the basal metabolic rate in children warrants a brief discussion, since divergent opinions exist as to what constitutes a normal pre-adolescent or adolescent reading. Cameron studied this problem for three years, and concluded that the findings of Talbot and Benedict, calculated on the body-weight principle, are too low in cases of children. He suggests that estimations should be based on the height rather than on the weight. He also advises that repeated tests be given, as the excitability and apprehension of the child affect the accuracy of the result. I recall one case in which there was a difference of between +20 and +63 in the estimates by the height and body-weight methods.

The basal metabolism is a valuable index in the diagnosis of hyperthyroidism, but its use in determining whether operation should be performed, or whether ligation, lobectomy, or thyroidectomy is indicated, will lead to disastrous results. Clinical judgment must be relied upon in determining the type of treatment required. The basal metabolism and the Goetsch test are valuable aids in differentiating between mild and severe hyperthyroidism. It is of especial value in the former case, as it may be difficult to differentiate mild hyperthyroidism from early tuberculosis and neurocirculatory asthenia.

This patient should have iodine medication. Otherwise, she may in later years develop hyper-

thyroidism which would necessitate surgical treatment.

CASE 4.—This man is 40 years of age. His only outstanding symptom is that he has lost approximately 25 pounds in weight during the past three months, although his appetite is good. A ravenous appetite is nature's way of compensating for loss of weight due to the increased metabolism in hyperthyroidism. His blood pressure is 142/80. No abnormality of the heart can be discovered by palpation. The thyroid gland is not palpable. The von Graefe and Möbius signs denote a slight exophthalmos. The basal metabolic rate after the first test was +40. Upon repetition it was +46.

Too much stress cannot be placed upon the importance of repeating the basal-metabolism test because the first reading invariably is incorrect. In a nervous, apprehensive patient we have found a variation as high as 25 per cent between the first and second readings.

Lugol's solution was administered to this man, with the usual results. The nervousness, tremor, excitability, and tachycardia gradually subsided and his weight increased. No change occurred in the exophthalmos, however. Rarely does administration of Lugol's solution decrease exophthalmos. It is well to tell the patient you cannot promise that the exophthalmos will recede even following operation; otherwise he may be disappointed, and you may be embarrassed. There is usually some recession, however, and as the flesh on the face increases, the exophthalmos becomes less noticeable.

By the usual method of palpation, I can find no enlargement in this case. The sternomastoid and prethyroid muscles are well developed, making it impossible to palpate the thyroid. By pressing on the laryngeal plate, and having the patient turn his head to one side and then swallow, I can place my finger under the lower pole of the thyroid.

Personally, I believe Lugol's solution should be used only in preparing a patient for operation. Once it has been administered, the same beneficial effect cannot be secured a second time.

This patient has gained twenty-one pounds in weight, and is probably at the point of maximum improvement. He has reached the saturation point, and further administration of iodine will have but little effect. His case is comparable to those in which thyroidectomy was performed before Lugol's solution came into use, commonly followed by an acute thyroid crisis. If he is not operated upon when the effect of iodine satur-

ation has been secured, he will have a similar reaction in a lesser degree, with a pulse of 164 to 170 and a stormy postoperative course. My advice to him is to have a partial thyroidectomy as soon as possible. He has all the classical signs of exophthalmos which will be progressive if operative interference is not secured.

CASE 5.—This man, 34 years of age, in December, 1928, first noticed dyspnea on exertion, palpitation, and tachycardia. Later, his hands began to tremble. He sweats very easily, is very nervous, complains of pain in his chest, and has lost thirteen pounds. The skin is moist, the face is flushed, and there is a pronounced digital tremor. The thyroid is diffusely enlarged and firm, but there are no thrills or bruit at the superior poles. The heart is normal in size. The metabolic rate on the first test was +57; on the second, +55. Of course, this is a typical case of hyperthyroidism.

This disease is more insidious in its progress than is exophthalmic goiter or adenoma. The first symptoms are tachycardia and palpitation. The heart may be compared to that of an athlete; as he runs, the heart rate rises, and the metabolism increases. So in hyperthyroidism; as the thyroid secretion is increased, there is an increase in the basal metabolism and the pulse rate. The tissues accumulate toxic substances, and the flow of blood through the tissues is increased in the effort to eliminate them.

The thyroid gland has been compared to the accelerator of an automobile. One steps on the gas and the car starts. When the thyroid secretion is increased or altered, the metabolism rises and the pulse is accelerated.

Following palpitation and tachycardia, the patient will develop a slight dilatation of the heart, accompanied later by systolic murmurs at the apex. A presystolic murmur is rarely due to hyperthyroidism. Of course, hyperthyroidism may be superimposed upon primary heart disease, but as a clinical entity, the presystolic murmur and thrill are not directly associated with thyrocardiac conditions. Similarly, the diastolic murmur found in primary aortic disease with aortic regurgitation is not heard. A high pulse pressure is frequent, however, in hyperthyroidism. If sufficient thyroid tissue is removed at this stage, the heart will almost always return to normal.

If the upper pole of the thyroid, which in many cases extends behind the trachea, is not carefully exposed, a large knob of tissue may be left behind, resulting in incomplete alleviation

of symptoms and persistent tachycardia following operation. Probably in many cases which cannot be classified as "cured," too much thyroid tissue has been allowed to remain. In this event, I do not hesitate to operate the second time, removing more thyroid tissue.

Following palpitation, tachycardia, and murmurs, the patient develops a temporary arrhythmia, and as it progresses, the signs of cardiac disease overshadow the clinical picture of hyperthyroidism, especially if the gland is enlarged but slightly. Upon slight exertion or excitement, auricular fibrillation appears, with an apex beat of 120 to 130, and a pulse rate of 80 to 90. Cases of this type usually do not show a grossly pathological condition of the myocardium.

Temporary arrhythmia is succeeded by permanent arrhythmia, and later by cardiac failure. The patient is unable to lie down, breathes rapidly, has slight cyanosis and edema of the extremities, and fluid may be present in the thorax and peritoneal cavity. It is difficult to conceive that so serious a condition could be caused by a small gland like the thyroid. Hence, medical treatment is employed and digitalis is administered, although this does not control the arrhythmia of heart disease associated with hyperthyroidism so well as it does the arrhythmia of primary heart disease. In any case of auricular fibrillation which does not respond to treatment with digitalis or quinidin, investigation should be made to determine whether or not the heart condition is the result of hyperthyroidism.

Under a judicious preoperative regimen, cases of cardiac failure, dilatation of the heart (even of the right chamber), hypertrophy of the left ventricle, and perhaps some necrosis of the myocardium frequently can be so improved that a surgical operation may be performed safely—possibly not a thyroidectomy, but at least ligations or a lobectomy. In the case of a large goiter it may be wise to remove only one-half of the gland, for a slight technical error might be fatal. The patient should then return home for twelve weeks under medical supervision, returning for the final operation.

I have seen cases in which fluid has been aspirated from the chest and abdomen, and after a course of digitalis, Lugol's solution, and perhaps novasurol, the condition was improved so much that ligations could be performed. The patients were then sent home for twelve weeks, after which thyroidectomy was performed successfully. In from four to six months patients who have been invalids—economic burdens—may be

brought to a point where they can earn a livelihood, even though they may not be able to endure a strenuous physical life.

There is no group of surgical cases which show such striking results as those in which a thyrocardiac condition is associated with hyperthyroidism. Many of these patients do not consult the physician at the stage of palpitation, nervousness, or temporary arrhythmia, but appear for examination because of cardiac failure, thus rendering the diagnosis difficult. As the basal metabolism is elevated in cases of cardiac failure associated with primary heart disease, such a test is of little value at this stage. Conclusions, therefore, must be drawn from clinical data. If the case does not respond properly to the usual medical treatment for heart disease, I believe it is wise to remove the goiter, especially if it is an adenoma. Of course, striking results cannot be expected in a case of primary heart disease in which the toxic effect of hyperthyroidism has been superimposed. However, the heart is relieved of additional strain, and if focal infection is also eliminated, the patient can probably be brought back to a condition in which he will be able to resume work.

In many cases of hyperthyroidism, especially in children, there is a focus of infection which seems to aid in maintaining the symptoms. I should not be so narrow as to insist that every suspicious tooth ought to be removed after thyroidectomy, and that if symptoms persist, there must be a hidden focus of infection, for usually the reason is that an insufficient amount of thyroid tissue has been removed.

This patient has all the classical symptoms of hyperthyroidism, and I advise operation as soon as he can be properly prepared for it. This type of case generally responds well to Lugol's solution, and I usually prescribe 15 minims three times daily, employing grape juice as the vehicle. The patient should also be given 2 c.c. of tincture of digitalis every four hours for six or eight doses, repeating this course if necessary.

We find that uncomplicated cases of hyperthyroidism and exophthalmic goiter receive the maximum effect of Lugol's solution in from ten to twelve days. In contrast to this, cases of adenoma with hyperthyroidism (in which we unhesitatingly administer Lugol's solution) receive the maximum effect in from five to seven days. Divergent views still exist as to the value of Lugol's solution in cases of toxic adenoma. It may be that these patients react differently to iodine medication in different parts of the coun-

try. However, we do not hesitate to use Lugol's solution in all such cases, and I do not recall one case in which there was an exaggeration of symptoms due to its preoperative use, although I have seen hundreds of cases in which definite improvement was observed. There is no doubt that if Lugol's solution is used in cases of hyperthyroidism and exophthalmic goiter, the postoperative reaction is minimized. We rarely see a "thyroid crisis" following operation, and if it does occur, it is due to a mistake in judgment on the part of the surgeon. Either the patient was not at the point of maximum improvement when the operation was performed, or the surgeon should have performed ligations or a lobectomy. The patient should be kept in bed during the entire preoperative period, and after operation, fluids and glucose should be forced, and the patient carefully observed for complications.

Divergent views exist also as to the efficacy of digitalis in cases of hyperthyroidism. Personally, I believe its effect is distinctly noticeable, although not so marked as in cases of fibrillation associated with primary heart disease. If a patient has had one or two courses of digitalis prior to operation, and then postoperatively develops a very rapid pulse, the heart can be much more easily digitalized if the drug has been given before operation.

CASE 6.—This woman, 64 years of age, was first seen in July, 1927. She stated that the goiter had been present for 27 years. The enlargement of the neck was slow but progressive. When first seen, she complained of marked shortness of breath and palpitation. At this time examination revealed a fairly large adenomatous goiter. Her blood pressure was 228/150, and her pulse 160 and irregular. The heart was enlarged, and cardiac fibrillation and decompensation were present. She was hospitalized for three weeks, and under administration of Lugol's solution and digitalis the heart became compensated. The basal metabolism was +20. Since this treatment, the patient has been fairly well except for shortness of breath. The blood pressure has ranged from 160 to 200. It is evident that she has large adenomata of the thyroid, involving both lateral lobes and the isthmus. That the adenoma is toxic is shown by the basal metabolism of +32, and other symptoms.

What shall we advise this patient? Surgical intervention, by all means, as soon as it is convenient for her to enter the hospital.

Without operation, what may be expected to happen? The adenoma may increase in size, de-

crease in size, or remain stationary, or it may become intrathoracic.

About 90 per cent of intrathoracic goiters arise from adenomas because the adenoma follows the line of least resistance. If a cervical thyroid gland becomes enlarged, an intrathoracic goiter may result, and the following factors favor its formation:

(1) The anatomic arrangement of the muscles of the neck. The sternothyroid muscle is attached to the posterior surface of the sternum, and thus affords a smooth surface for the gland to slip over in entering the thorax, and because of resistance offered by the anterior group of muscles in the neck, descent into the thorax becomes the path of least resistance. Posterior growth is limited by the spinal column and the trachea, and lateral growth by the scalenus and sternocleidomastoid muscles.

(2) Deglutition, which tends to favor the downward growth of the tumor. After the goiter, which is usually a colloid adenoma or a cyst, passes into the thorax, it may gradually increase in size, or, in rare cases, it may increase suddenly because of hemorrhage into the cyst, becoming so large that it is unable to pass back through the aperture into the neck. It thus becomes fixed in the thorax.

(3) Terry mentions also the influence of gravity and the dragging effect of inspiration as factors in the etiology of intrathoracic goiter.

In our series, half of all cases of adenoma are completely intrathoracic, and ten per cent may be classified as incomplete intrathoracic.

Ordinarily, intrathoracic goiters do not present a very difficult surgical problem. If in addition, however, the patient has symptoms of hyperthyroidism, then operation is more hazardous. The mortality in such cases is still relatively high if the patient is seen late in the progress of the disease. If, during an operation for intrathoracic goiter, additional symptoms develop, it is difficult to stop the operation, pack the neck open, and excise the opposite side the next day. Once the delivery of the goiter is started, the operation must be completed.

Ninety per cent of the cases of carcinoma of the thyroid arise from adenomas. In practically all cases there is a history of the presence of a nodule in the thyroid for a period of time. Suddenly, or gradually, this nodule begins to enlarge, and by the time the patient comes in for examination, it has become malignant. Ninety per cent of our series of 267 cases of cancer of the thyroid have developed from a previous ade-

noma. In view of this fact, the best method of prevention of carcinoma of the thyroid is to remove the adenomas. The popular style of low-necked dresses makes the presence of an adenoma very obvious, and patients seek examination much earlier than in the past. Only a few years ago, the average age at which patients with adenomas presented themselves for examination was 44 years, although the adenoma had been visible for an average of 14 years.

Adenomas may also produce pressure symptoms by distorting the trachea. If the adenoma arises from the region of the lower pole, there may be anatomical variations in the normal position of the recurrent nerve, rendering the operation more hazardous. The recurrent nerve may even pass over the anterior surface of a small adenoma arising in the region of the lower posterior pole. Occasionally, paresis of the recurrent nerve may be present if the adenoma becomes intrathoracic. Dyspnea and inspiratory stridor were present in 66 per cent of our cases of intrathoracic adenomas, choking in 30 per cent, dysphagia in 24 per cent, and hoarseness and change in the voice in 25 per cent.

Finally, the adenomas may become toxic, affect the heart, and produce symptoms of hyperthyroidism. Therefore, it behooves a consultant to weigh his reply carefully when a patient inquires what may happen if an adenoma is not removed. For other than benign tumors operation is recommended. If a patient has a tumor of the breast, we advise surgical treatment; why, then, should we not counsel operation for an adenoma instead of allowing the patient to run the risk of developing an intrathoracic goiter, malignancy, toxicity, or pressure symptoms?

Recently, we saw a patient who had had a large adenoma in her neck for 17 years. Suddenly she developed severe pressure symptoms and slight cyanosis. Profuse hemorrhage into the cystic adenoma occurred, and immediate operation was necessary.

I have been asked to discuss briefly the operative treatment of intrathoracic goiter.

Here are a few points to remember which facilitate the removal of this type of goiter:

(1) There should be adequate exposure. Do not hesitate to cut the prethyroid muscles transversely if necessary. Begin the initial attack at the upper pole.

(2) Loosen the attachment at the superior pole and free the thyroid along the trachea. Mobilize the upper portion of the gland, ligating the vessels of the superior pole after clamping

them. After the entire upper pole has been mobilized, ligate all the bleeding points, and before attacking the intrathoracic portion of the thyroid, it is well to have the field free from hemostats.

(3) Pass the finger down about the intrathoracic portion, taking care to avoid getting outside the fibrous capsule. The goiter can then be delivered up into the neck. It must be remembered that the intrathoracic portion is in close proximity to important structures and the greatest caution must be exercised in delivering it.

(4) Ligate the lower pole.

Difficulty in breathing may be encountered temporarily in delivering the intrathoracic goiter, but this subsides after the goiter is brought into the neck. Ordinarily, arterial circulation enters the lower pole through the inferior thyroid artery which communicates with the gland half way between the poles and remains in the same place, regardless of the position occupied by the goiter.

Formerly, it was the custom in all cases of thyroidectomy for intrathoracic goiter, to close the wound tightly except for a rubber tube drain. However, we have found that when this is done, mediastinitis may supervene. The cavity left when the intrathoracic goiter is removed does not collapse immediately. Serum accumulates in it, making an ideal place for infection to develop. Some oozing may also occur in the cavity following the removal of the goiter. In order to control this, we usually pack the cavity with acriflavine gauze which is removed on the following day, and the incision closed. Occasionally some hemorrhage occurs when the packing is removed, but it can be controlled by repacking. Since adopting this technic, we have not lost a case from mediastinitis.

An additional means of preventing infection in large cavities is to pass an ordinary catheter into the cavity and leave it there for a couple of days after removing the gauze, closing the muscles and skin well about it. The cavity is kept free from serum by aspiration with a syringe.

CASE 7.—This woman, 62 years of age, illustrates the good results that can be secured by thyroidectomy. She had been aware of the presence of a goiter for 30 years. Six months ago she noticed increased excitability, irritability, nervousness, tachycardia, palpitation, and marked dyspnea. The adenoma had finally become active, exerting its deleterious influence upon her system.

Examination revealed a fairly large adenoma, auricular fibrillation, edema of the ankles, and a blood pressure of 166/70. After thyroidectomy, her condition gradually improved. The heart is now regular and the patient is free from symptoms—an excellent result, and a credit to surgery.

CASE 8.—This woman has a nodular goiter accompanied by "Horner's syndrome"; that is, exophthalmos, ptosis of the eyelids, and dilatation of the pupils. We can not assure her that removal of the goiter will cause this syndrome to disappear, but as it is an adenomatous goiter which is gradually descending into the thorax, surgery is indicated.

CASE 9.—When first seen in 1928, this woman, 35 years of age, stated that during her last pregnancy two years before, she had first noticed enlargement of the thyroid, which had been progressive since that time. She tried various medicines without noticing improvement. Two weeks before she was examined, she had become dizzy and weak, with dyspnea and palpitation, and had been unable to work since. She had lost twelve pounds in weight. Examination revealed a large thyroid adenoma, a blood pressure of 160/80, and a pulse rate of 140, but no heart murmurs nor evidence of decompensation. Operation was performed in June, 1928, and a pathological report of exophthalmic and adenomatous goiter was returned by the pathologist. After operation, the patient still complained of nervousness, palpitation, weakness, and loss of weight. The basal metabolism ranged from +36.8 to +32. She was given Lugol's solution and the symptoms subsided. She now weighs 140 pounds.

When symptoms persist following operation, there are usually two factors involved: First, the patient may have had a very toxic gland and insufficient tissue was removed, or perhaps a portion of the upper pole extended behind the trachea and a larger portion was left behind than was intended. Second, damage to the myocardium may have progressed to such a stage that it is impossible to restore the heart to a fairly normal condition. We have found, however, that persisting symptoms usually are due to the fact that insufficient tissue has been removed.

One of the most important phases of thyroid surgery is the morbidity, since the mortality has been so reduced that operation may be unhesitatingly recommended when it is indicated. The death rate ranges from four-tenths to six-tenths

of one per cent, which includes, of course, the bad-risk patients with diseased myocardium. A patient rarely dies after an operation for acute hyperthyroidism. Emboli and pneumonia, of course, may supervene.

There are several complications following thyroid surgery, and the first to be discussed is postoperative hemorrhage. When operation is performed under local anesthesia, the small vessels of the skin flaps may collapse from the pressure of the novocain and superficial ecchymosis may spread along the neck and down upon the chest wall. Fortunately this does not affect convalescence, except for the appearance, which is but temporary. If active hemorrhage occurs following thyroidectomy, the neck must be reopened, adequate exposure secured, and the bleeding vessel ligated.

I recall a case of hemorrhage three days after operation following ligation with a silk suture. I believe it is advisable to include a portion of the thyroid tissue in the ligation of the superior thyroid vessels in order to eliminate the possibility of the suture cutting through the artery. As a matter of fact, it is not certain whether the beneficial results of ligation are due to interruption of the nerve impulses which pass to the thyroid with the superior thyroid vessels, or to the cutting off of the blood supply. For this reason, it may be of definite value to include the point at which the vessel passes into the upper lobe, instead of ligating only the artery.

The second complication, which is much to be dreaded and is occasionally seen, is recurrent-nerve paralysis. Examination of the vocal cords should always be made prior to thyroidectomy. In many cases of malignancy of the thyroid, recurrent-nerve paralysis will be found.

The first type of recurrent-nerve paralysis occurs at the time of operation. In some unilateral cases, clinical symptoms are not evident, and there is no change in voice or difficulty in breathing. Cases of this kind are discovered when the vocal cords are examined before the patient is discharged from the hospital. If bilateral paralysis of the vocal cords occurs, dyspnea and cyanosis develop, and tracheotomy should be performed immediately. This is done preferably by opening the trachea transversely between the tracheal rings instead of by a longitudinal incision in one of the rings.

The second type of recurrent-nerve paralysis develops after operation. The patient is discharged with both cords functioning normally, but upon his return three months later for a re-

check, paralysis of one cord is found. I have attributed this condition to contraction of scar tissue near the nerve, but am not certain that this really accounts for it. Abductor paralysis is more frequent than adductor paralysis.

The surgical treatment of recurrent-nerve paralysis is not very successful, although some reports are now promising.

The third complication to be considered is tetany. Opinions as to the location of the parathyroids have changed to some extent. Terry, of San Francisco, has presented some very interesting observations on the subject. He has found the parathyroids in the capsule laterally, and even anteriorly, in addition to their usual location. They may also be embedded in the thyroid gland itself. If the resected portion of the gland is examined, the parathyroids occasionally may be seen as little chocolate bodies, each with a definite small artery passing into it. Since parathormone has been given us, very little difficulty is encountered in controlling patients with a low blood calcium. We usually prefer to ad-

minister calcium lactate or calcium chloride with the parathormone.

A fourth complication is hypothyroidism. A mild hypothyroidism following operation for hyperthyroidism occasionally is of benefit, and is certain to have an excellent end result. I have never seen a patient with an active hyperthyroidism who developed lasting symptoms of hypothyroidism after operation. In mild cases of hyperthyroidism, however, hypothyroidism occasionally develops postoperatively and is difficult to handle. Thyroid extract is needed over long periods of time, and the dosage must be carefully controlled by frequent determinations of the basal metabolic rate.

Fortunately, complications following thyroidectomy seldom occur, and with improved technique, they are being gradually eliminated. Cases of true myxedema (cases in which operation has not been performed) apparently are now seen more frequently than in the past. Of course, diagnosis has been assisted by basal metabolic determinations, but other factors are probably involved.

ANGINA PECTORIS ASSOCIATED WITH MYXEDEMA HEART*

BY THOMAS ZISKIN, M.D.

The occurrence of angina pectoris as a complication of myxedema heart is of interest for several reasons. First, it introduces another factor which must be considered in the differential diagnosis of the syndrome of angina pectoris. Second, it adds another drug which may be used in the treatment of some cases of angina; and third, it helps to throw some light on some of the anatomical changes that occur in certain instances of angina pectoris. While the occurrence of angina pectoris as a complication of thyroid disease is not common, yet it is not rare. Several observers have reported its presence in hyperthyroidism, and a few have reported its occurrence in myxedema.

The case reported below is one of angina pectoris associated with myxedema. The clinical picture, however, does not correspond in its entirety with others reported previously and is of interest for that reason.

L., age 43, a laboratory technician by occupation, was taken with a sudden attack of pain in the precordium in the latter part of December, 1927. This

pain was vicelike in character and lasted for a couple of hours. She was given symptomatic relief by one of the doctors at the hospital and was able to return to work that day. A few days later, while walking from one building to the other, she was again taken with a severe agonizing pain in the precordium and fell prostrate to the floor and was helped back to the hospital and put to bed.

When I first saw her the next morning she complained of a constant dull ache over the heart with occasional attacks of pain. She also complained of weakness, dyspnea and nausea. On questioning she stated that she had not felt well since 1918 when she was operated upon for removal of the gall-bladder. She also had influenza during that year, being ill for five weeks, with marked prostration during that time. She also had sinus trouble and tonsillitis during that year, and had her tonsils removed, sinuses drained, a submucous resection done, and turbinates excised. She did not improve very much until 1921, but during that year she felt fairly well. In February, 1922, she had another attack of influenza, and this brought on a recurrence of her old symptoms. She began to complain of pains in different parts of the body, headaches, weakness, tendency to exhaustion on the slightest exertion, puffiness of hands and feet. She consulted a physician for the first time for her present trouble in May, 1922, and a diagnosis of myxedema was made. Her basal metabolism at this time was minus 50. She

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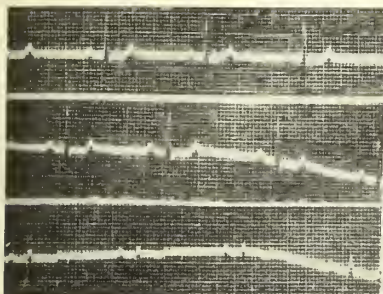


Fig. 1.—Electrocardiograph taken January 26, 1928, showing tendency to diphasic T waves in lead I and II, delayed auricular ventricular conduction. P. R. interval 22 seconds.

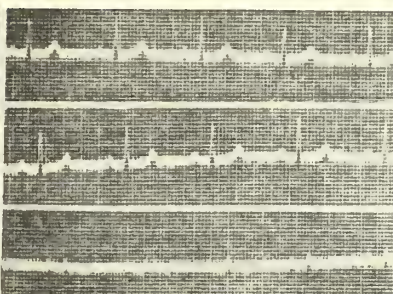


Fig. 2.—Electrocardiograph taken February 28, 1928. T waves have returned to normal. P. R. interval still 22 seconds.

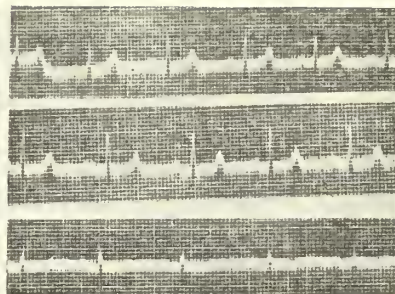


Fig. 3.—Electrocardiograph taken April 12, 1928. T waves normal. P. R. interval 20 seconds.

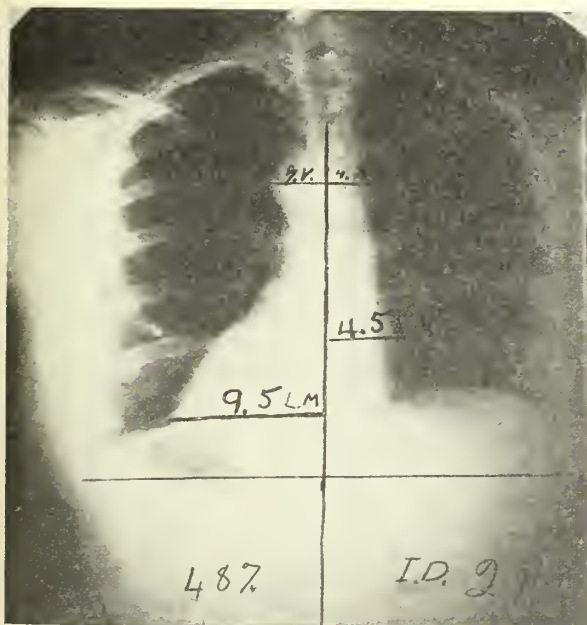


Fig. 4.—Teleoröntgenograph taken before thyroid treatment was started.

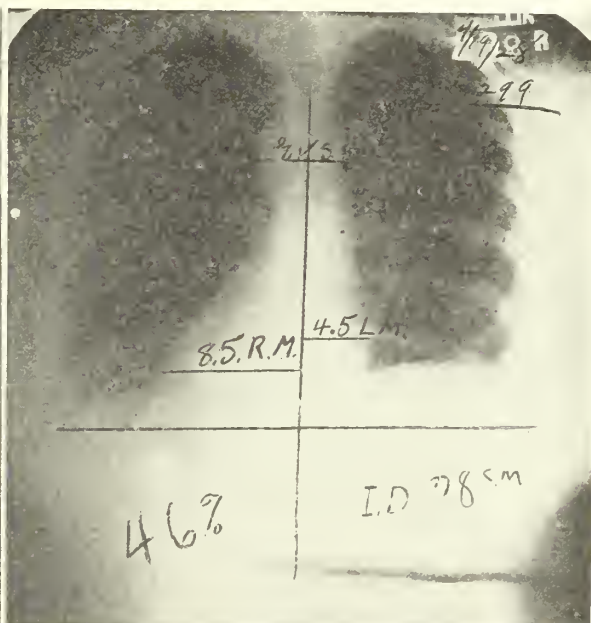


Fig. 5.—Teleoröntgenograph taken one month after thyroid treatment was begun. The transverse diameter has been reduced 1 centimeter.

was put on thyroid medication and showed marked improvement. In July, 1922, her basal metabolism was minus 19 per cent. While she felt better in 1923, she still complained of indefinite pains in arms. In January, 1924, she began to have sharp pains in the precordium, especially on climbing stairs. In 1925 and 1926 she felt fairly well.

The family history is essentially negative. Father and mother are both living, aged 77 and 71, respectively. Upon examination in December, 1927, patient showed a sallow, pasty complexion, and was very much overweight, her weight being 190 pounds. The general examination was negative excepting the heart.

Examination of the heart revealed no enlargement to percussion. There were no murmurs present. The heart tones were somewhat distant. The pulse rate was 54, the rhythm was regular, the blood pressure was 120 systolic and 80 diastolic. The electrocardiogram showed a bradyardia and a delayed

auriculo-ventricular conduction. A tentative diagnosis of coronary disease was made and treatment instituted. She continued, however, to have severe pains in the precordium even at rest. Basal metabolism tests were then taken and were found to be minus 28 on two occasions. She was put on thyroid medication beginning with one-fourth grain three times a day and the dose gradually increased. Her pains disappeared and there was a remarkable improvement in her general condition. She left the hospital in April, 1928.

She did not get along well at home and returned to the hospital in September, 1928. She is now taking 3 grains of thyroid extract a day and has had no severe anginal attacks since she began taking the thyroid extract, although she complains of a slight pain in the precordium at times.

The description of the syndrome of myxedema heart as brought to the attention of the profes-

sion in this country by Fahr, namely: A marked dilatation of the heart, dyspnea on exertion, anasarca, passive congestion of the lungs and liver, responding to treatment with thyroid extract by complete relief of these symptoms and the bringing of the metabolism back to normal and the disappearance of the myxedema, does not fit in exactly with this case. Here the heart was only slightly enlarged, the major symptom was angina and there were no signs of decompensation. The symptoms, however, disappeared on thyroid medication, the heart size was reduced, and the basal metabolism returned to normal. There was present also supportive evidence of coronary involvement, as shown by electrocardiographic examination.

That coronary sclerosis and extensive atheroma of the arteries all over the body occur in myxedema has been noted by many observers. Fishberg has proved by means of anatomical and experimental means that a loss of thyroid secretion will cause injury to the vascular system. As coronary sclerosis is recognized as the underlying pathologic condition in most of the cases of angina pectoris, it is easy to understand the relationship between myxedema and angina pectoris in some instances. It may be assumed also that myxedema heart, with angina pectoris as the major early sign of failure and without marked enlargement and other evidences of failure, may occur just as other types of heart muscle disease may occur with angina pectoris as the major symptom and without enlargement, anasarca and passive congestion.

There are several theories as to the cause of the pain in this condition. Keefer and Resnik in a recent monograph on angina pectoris state that anoxemia of the heart muscle due to insufficient blood supply is the cause of the pain.

The presence of pain in myxedema heart may be explained by this theory. The narrowing of the coronary vessels and the reduction to a minute volume as a result of the myxedema

produces a blood flow insufficient for the needs of oxidation in the heart muscle, and pain results.

Observations on the treatment of myxedema, complicated by angina pectoris, also have been varied. Some clinicians have noted that the use of thyroid extract in this condition tends to increase the pain and have warned against its use, or the exercise of extreme caution in its use. They believe that by giving thyroid the increased blood flow and the increased work thrown on a heart that is unable to stand it causes an aggravation of the pain in these cases. Means, White, and Krantz reported a case where they could bring on anginal attacks by giving sufficient thyroid to bring the basal metabolism to normal. Others have used thyroid extract in the treatment of myxedema with apparently good results. Fahr, reporting several cases of myxedema heart noted the presence of pain in the precordium after the administration of thyroid in only one case.

In the present case the angina disappeared after the administration of thyroid and the patient has remained free from anginal attacks ever since. The administration of thyroid in these cases, however, must be done gradually and with caution. Too much work should not be thrown on the heart at one time. The proper maintenance dose must be determined in each case and the patient kept at this level at all times. If this is done it is believed that thyroid may be safely given to these patients without fear of aggravating their condition.

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A COUNTRY DOCTOR TAKES A LOOK AT STOMACH COMPLAINTS*

AN INQUIRY AS TO THE CAUSE OF THE HIGH COST OF MEDICAL CARE

BY ARTHUR E. HERTZLER, M.D.

HALSTEAD, KANSAS

The high cost of medical care becomes a problem only after it departs from the sphere of the general practitioner. The problem is to find out what happens when he is eliminated,

and to find out whether the added cost between the service rendered by the general practitioner and by the hospitals and clinics is worth the money. The high cost of medical care comes

about, in my judgment, because the patient is given too much of what he does not need, with equipment unnecessarily expensive to accomplish the end to be attained. In addition medical talent is wasted because of a lack of organization. Half a dozen men go to a hospital to perform a series of operations which any one of them could do in less time, less expense to the hospital, consequently with less expense to the patient.

Another factor which added to the cost is the building of palaces instead of hospitals. Things are relative. A hospital which would look like a palace to the patient from the hinterland would seem plain to the upper crust. So hospitals are planned by the upper crust of society so that their elegance will meet the demand of the most critical of the upper crust. Crust is the word.

The hospital equipment likewise is injudiciously multiplied. Efficiency men who have never had anything to do with hospital management "standardize" hospitals, and recent graduates, asses who know little of medicine and less about hospitals, come around to "inspect" us and insult us by their silly observations and criticisms. For instance, we were so inspected and we received notice that we should have a new X-ray equipment. The facts were, our machine was just four months old and the best possible to buy. The cub inspector just had never seen that type of machine. Did he ask to see the work done by the machine? He did not. He just looked at it and didn't like the looks of it (I felt the same way about the inspector's face). In a word, everything is planned on an ideal basis. The practical side is ignored because the self-appointed standardizers know nothing about the practical requirements of a hospital designed for the average man. To command respect inspection must be comprehensive and just.

Hospital care having been standardized beyond the reach of the average man, the cause of the high cost of hospital care is now being investigated by those furthest removed socially and sympathetically from the persons most interested. Now they are trying to "unscrew the unscrutable" as the negro preacher put it. If Henry Ford had been like-minded he would have ceased to build anything but Lincolns and a lot of us would now be footing it to work.

My purpose is to examine but one phase of the question of the high cost of getting well,—that of diagnosis.

When a person is sick, or thinks he is which is worse, having no faith in the family doctor he makes a self-diagnosis and proceeds to find a specialist dealing with the diseases of the particular apparatus which he thinks is at fault. If he finds the right kind of specialist, well and good. The chance of his doing so is about 1 in 20. If he fails to select the proper specialist, one of two things may happen. He may be treated for what the specialist represents or may be sent to specialists in other lines. A multiplication of specialists soon makes the cost prohibitive. It is now generally recognized that the ideal way to obtain a diagnosis is to apply to a clinic where the required examination can be made without reduplication of effort, hence at a saving of time and cost.

When a patient applies to a clinic, what should be done with him? Shall he go through a routine of a general examination or shall we attempt to reduce the cost by making only such examinations as may be needed? In my clinic we aim to do only what is needed and charge accordingly. I have selected stomach complaints to illustrate how, in my judgment, this should be done.

When a patient enters the clinic a history is obtained and the routine physical examination is made by one of the assistants, not interns but residents sufficiently experienced that their general findings may be accepted as essentially correct. This requires on the average half an hour. I then see him. I would emphasize the word *see*. A glance may give one a good idea as to whether or not the stomach complaint has an organic basis or not. One can see whether there has been any notable loss of weight. If there is no loss of weight the probability is that there is no organic disease. If there is no organic disease of the stomach one asks himself if there is any evidence of constitutional disease which might affect the stomach. Assuming that the patient presents no evidence of organic disease; pink mucous membranes, normal pulse, elastic skin. The chances now are that the stomach disturbance is due to an agitated or abnormal state.

It is misleading to speak of stomach complaints as gastric neuroses. This designation suggests that the stomach is at fault but the stomach is not at fault. It is the patient who is nervous. Forget the stomach and cause the patient to forget it.

Starting with this assumption I divide stomach complainers, in my mind's eye, into the fol-

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lowing groups:

1. Alimony hunters.
2. Social misfits.
3. Physically substandard.
4. Cornfed dame.
5. Male neurasthenic.
6. Reflex pelvic.
7. Worried business man.
8. Organic diseases of the stomach.
9. Organic disease simulating stomach disease.

Alimony hunters.—This type should be diagnosed at a glance by an experienced practitioner. They have faces that would congeal boiling oil in August. Their faces have as much expression as a Chinaman's. When one is confronted by a five hundred dollar necklace encircling a forty-cent face he may know that he is up against a real problem. Their complaints are not voluble but as emphatic as indefinite. The resident obtains but little information and the chief's effort to gain more information is resented. They complain some of gas, some burning and discomfort, all aggravated during the night. Some are wise enough to give a clear cut history of ulcer. They come alone unaccompanied by husband or female friends. They give you the glassy eye. They remind me of the days on the farm. I learned that whenever a cow kept her eye on me while I was placing my stool in position I was not going to get much milk and might soon be kicked out of the barn. I have often wondered why this type of patient comes to the doctor at all. Nobody can tell them anything and they know it.

Unfortunately most of these patients have spouses worth more to keep as work horses than the alimony would produce and it is necessary to assume some sort of illness in order to abstract the desired concession whether it be a fur coat or a trip to Florida. These are difficult problems and even if one is sure of his ground one works under a handicap unless he has the full confidence of the husband. In such cases with tact and bromides one may accomplish something.

Some are deliberate prenuptial gold diggers. This type, it is apparent, belong in a lawyer's office and it is best to tell them so.

Social mismates.—This type may have some of the attributes of the preceding but the motif is different. In their own minds they have been unfortunate, unappreciated, mismates, perhaps the husband prefers blondes. In a word, Heloise, the waitress, has married Clarence

the head bookkeeper. The patient is attended by a retinue of sympathetic female friends. No one can weep well without the stimulation of an understanding audience. The story of neglect is a sad one.

The digestive history is equally variable, differing with each examiner or with each visit of the patient, but usually there is nausea and often persistent vomiting. It is absolutely impossible for them to keep anything on their stomachs. Perhaps she requests a "blood examination." You know then at once that she suspects Clarence has brought home something from the Blonde, and you are dealing with a syphilophobe or a gonophobe or a "blondophobe."

First of all you inquire the weight of the patient prior to the alleged onset of the illness. Then you weigh the patient but keep her guessing as to her present weight. The weight is stationary and then it is easy to evaluate the statement as to the vomiting. Many of these patients are actually sick, and it is difficult to say where self-pity ends and disease begins. A physical examination may reveal some anatomic anomaly; a goiter, a heart lesion, some pelvic disease. Anatomic evidences of disease are recorded but ignored for the present. Blondophobia is an absolute contra-indication for any but life saving operations. For the time being, one must concentrate on the cure of the stomach lesion which does not exist.

The patient must be individualized, the treatment depending on the type of patient. The younger women usually supply the vomiting type. You explain that the stomach trouble is due to nervousness. If there is any excuse for assigning the trouble to overwork, seize on that. The laziest person on earth is complimented if you suggest he is overworked. That is always a safe lead. If her face lightens up at this suggestion one can give her full doses of bromides and ask for a later interview. If you cannot relax her face by this talk, and vomiting is the dominant complaint, it is necessary to take her into the hospital. Explain to the nurse, out of sight of the patient but within her hearing, that the patient must have very small quantities of broth for a day and then be put on full diet at once and if she vomits, get the stomach tube ready for gastric lavage will be necessary. An empty gnawing stomach with threats of the stomach tube causes the most of them to eat everything that comes within reach. Some of them actually must be lavaged. This leaves

very few uninfluenced. In this type, the element of jealousy, the most incurable of diseases, is the dominant factor. Blondophobia is incurable. Sometimes this type presents some of the elements of the first and one can but turn them over to an attorney for the plaintiff.

The middle aged may be comforted if you ascribe her symptoms to the menopause. That is always a safe lead. Explain that the stomach disturbance is a reflex just like the vomiting of pregnancy. This type less commonly features the vomiting. If they ask for a "blood test" you have at once a lead. She has blonditis. They present their reason for suspecting an infection if you will tactfully inquire. Draw them out as far as you can without allowing them to know what you are after. Then turn lawyer. Make them confess to you that they would have difficulty in proving their statements in a court of law. In court the corpus delicti of the blonde must be produced. Explain to them that the nervous disturbances due to the menopause often so upset the patients. A course of bromides by allaying the nervous irritation may make things look more rosy. Sometimes one talks sympathetically of the labor in raising the children, labor well spent. Again one must tell them that they represent just another fool trying to separate herself from her meal ticket; that you have seen many of her kind kick themselves into a nice warm job in a laundry. This may start them to thinking.

Sometime civilization is going to have to tackle the limitation of babies or the Malthusian law will most certainly get us. The committee now meeting in London had better busy themselves with the limitation of babies. By so doing they would limit overcrowding and hence the urge for battleships. I am not concerned with the moral aspects of the question but I must be concerned with blind effort of the population to solve the problem for themselves. We doctors, by eliminating infectious diseases, have destroyed nature's method of limiting population. Be this as it may, the solution of the laity brings about stomach disorders by producing domestic discord, by plain fear, and by reflex disorders from the pelvis, and the wise doctor must consider these angles if he would cure his patient. Even a proper understanding of these cases avails us but little with our own ethical and religious teachings and the limitations imposed by law. The late Mr. Marshall stated that what the country needed most was a good five-cent cigar. This is all very well as applied to the

senescent male but to the over-prolific woman there are more urgent desiderata.

The real social misfit is a different proposition, as are the deserted women and the widows. Instead of parading their troubles they hide them. The grief is real and permanent and with it the physical complaints. Antacids and bromides, perhaps strychnine, help them carry the load and make for a grateful friend.

If any of the above have pronounced organic disease requiring surgery it should be postponed until the stomach complaints are eliminated. Minor gynecological lesions had best be ignored permanently.

The cornfed dame.—I would include under this head the overfed and under-exercised individuals. These patients complain of distention and gas, sometimes acid eructations. Quite commonly they complain of high blood pressure. Some of them even suffer from it. They may have periodic pain in the epigastrium. They have trouble sleeping, worse since the menopause. It is a mistake to boast that we know nothing about the causes of high blood pressure and can do nothing about it. Antacids and luminal with or without laxatives and diet make this type comfortable. A drop of a few points in blood pressure makes them happy—this, and the associated effect of the luminal. In some, particularly those with spastic colons, hyoscyamus or belladonna in full doses with bromides must be given. In this type the possibility of gall-stones or other liver trouble must be kept in mind. In men particularly one must be ever on the lookout for possible heart lesions. If there is a heart lesion or a high pulse pressure the patient better come into the hospital.

Physical substandard.—This class are aplastic from birth. Usually they come complaining of "dropped stomach" or an equivalent expression. They have had a "complete examination" elsewhere and the stomach lies in the pelvis and they seek relief. They are dysmenorrhic and usually have had a "chronic appendix," often have had an ovary resected, and possibly the gall bladder drained, and even yet sometimes kidney anchored. The stomach may be accused of anything under the sun. They are not sure if the pain is in the stomach or back and topographically there is little difference. These patients are born to mourn.

It is not important what one does for them so long as it does no harm. Mild sedatives and a sympathetic explanation that the position of the stomach depends on the shape of the indi-

vidual and has nothing to do with the complaints. Remind her that much of the work of the world has been done by frail persons. That is also a safe line of talk. They are pleased to find someone who understands them and they will take your little pills years without end uncomplainingly. What the pills contain is less important than that they should be big and pink. You keep them out of the hands of cults and too eager operators and in this way render them a real service. The treatment costs little. We charge them little. The pills we use cost 47 cents a thousand. They are big and pink, thus meeting every indication.

The neurasthenic male.—Of all the animals which inhabit the earth this is the most pestiferous species. His stomach complaints are decided but indefinite. His facial contour is that of a Kansas democrat the day after election. Days gone by when moustaches were in order one could spot these boys a block away. The moustaches drooped down contra-Kaiser-wise. The history is difficult to obtain. If one inquires whether or not the stomach pain radiates, "It certainly does," either to the occiput or to the groin or testicle, they tell with enthusiasm. With this question the ice is broken and the regular history of the sexual neurasthenic is showered on you. Once you set them free on this line the stomach complaint is forgotten.

I once asked a very wise doctor what he did with this class of patients. He replied, "Send them to some man I dislike, preferably in another town."

The impotent patient is equally incurable. Coupled with his weak stomach is a general feeling of malaise. This type is accompanied by his wife and she does the talking. That is pathognomonic. These unfortunates should be referred to the Interstate Commerce Commission.

The tired business man.—This represents a large portion of the patients with stomach complaints without organic basis. Quite commonly there is loss of weight in addition to epigastric pain, distention, and acid eructation. There is history of night pain. Kind of food makes no difference. There may be food and alkali ease. There is generally disturbance of sleep and quite frequently they admit of nervousness during the day. The apprehensive look, the epigastric pulsation, the general solidarity of the individual is sufficient to characterize these cases. One can sense the business conditions of the country by these cases. Immediately after the war it

was the cattle men. Big fisted men from the plains with stomachs that had laughed at sows-belly and beans since childhood. Then came the bankers, wobbly nose cases representing frozen assets depicted on their faces. Then came the millers. Speak understandingly to these men of business conditions and they will tell you that they have been under a great nervous strain which parallels in time their stomach complaint.

These are the most satisfactory of all to treat. Antacids for a while, luminal for sleeplessness, bromides for the general nervous tension. They begin at once to regain their lost weight and their confidence in themselves and with these their stomach complaints cease. For diet: sows-belly and beans, beefsteak,—anything that belongs to a he-man's diet. If one places them on a restricted diet their apprehension is excited and their confidence in your veracity is shaken. Some of them have colon spasm, possibly mucous colitis. These are thin patients, with the book-keeper look. They have the epigastric pulsations most marked. They must have hyoscyamus or belladonna and bromides and a diet suitable to their calling.

In all these various classes of cases a diagnosis can be made in a few minutes by an experienced general practitioner. It is a question of unraveling the patient from his complaints. One must have confidence in his judgment of human nature. Everyone will build up his own system, have his own pet hunches. Likewise, he must have a knowledge of physical diagnosis to give confidence in his findings. No general laboratory diagnosis is required. In fact an elaborate laboratory examination may be harmful for it may stimulate introspection, particularly if some remark is dropped suggesting some deviation from the usual. Deviations in position of viscera may be like a 2 plus Wassermann—meaningless to everyone except to an apprehensive patient.

Sometimes a general laboratory diagnosis is advisable: When shall we recommend it? Even if the clinical diagnosis is certain, when the patients have gone through a clinic elsewhere and it is apparent that you do not have their full confidence, tell them, in your judgment the examination will be negative but that a rechecking of the evidence is in order if they wish it. I must confess that I get a lot of pleasure grandstanding with this type. I like to have a patient who has been in the hands of a "high powered" stomach specialist. Give him bromides and tell him to forget it.

Some cases one sends through the clinic as a matter of self protection. Otherwise they may go elsewhere and some examiner tells them they have nine ulcers and seven adhesions and that he cannot understand why an X-ray examination was neglected at your clinic. Some that have not gone through a clinic may desire to do so when there is no good reason for their doing so. If the desire seems reasonable it may be done. Some of the neurotics are harmed by acceding to their wishes. If they refuse to take your judgment it is best that you part company right there.

There is a small group where one desires a visualization as confirmatory evidence. Now and then one has a surprise of course. The nervous thin individual may have stomach retention which is revealed only by an X-ray examination. Even in cases where retention is evident of course one will want to know from the X-ray just what the degree of retention may be.

If patients believe they should go through a clinic and if the need is not apparent, if you have the confidence of the patient to begin with, one may say that in one's judgment they may be spared the loss of time and expense of a laboratory examination but should the progress not be satisfactory such an examination may be made at a later date. This plan is particularly applicable to those patients living within easy Ford travel distance, say two hundred miles. This is the biblical equivalent of a day's journey as measured in Kansas.

The point I want particularly to make is that one should end with the laboratory and not begin with it. Laboratory examination should be made only after the physical examination has been completed. Then one can make whatever laboratory examination may be needed.

Organic disease.—When there is evidence of organic disease I believe a complete examination is in order. This is more serious business and need be touched on but lightly here because that is the field for concentrated detailed work of specialization. The presence of organic disease is generally strongly suggested at a glance. History of ulcer with obvious pyloric stenosis is suggested by the evident loss of weight without cachexia. The X-ray is indispensable to determine the degree of retention. Sometimes an ulcer can be demonstrated. Examination for occult blood and a general blood examination may give valuable information. Acid determination of the stomach contents is of no use except

to embellish the clinical chart for the edification of the cub inspectors. The cancer patient is usually obvious at a glance, even without a history. The story of the rapid and progressive loss of weight. They have the cancer look: that far-away serious look that is prophetic. A cancer patient never laughs. Even if the diagnosis is unquestioned it is well to be fortified by graphic evidence.

Reflex cases.—Extra-gastric diseases affecting the stomach may be difficult to exclude. The most difficult of these to disclose are affections of the gall bladder. In many cases this cannot be done with certainty and their presence may be suggested, particularly in the corn-fed dames. A soft landing place may be provided by stating that though stones may be present it will be well to provide a relative comfort by treating the stomach trouble only, while awaiting results. In the absence of distinct colics the diagnosis of stones is always more or less of a guess. Renal diseases, particularly diseases of the renal pelvis, with or without stone, generally without stone, must be considered with the utmost care.

Rare things must be considered such as tabes, syphilis of the stomach, foreign bodies as bezoars, spondylitis, and other like complaints too numerous to mention.

What proportion requires complete examination? Dr. Ray Lyman Wilbur said, in an address in Kansas City, that a doctor should make 80 per cent of the diagnosis in his B.V.Ds. You can get a good pair of B.V.Ds. at Penny's for seventy-five cents. But why take the responsibility of a B.V.D. diagnosis instead of running them all through the clinic? Money, confidence, psychology. The difference between a charge of five and one of fifty dollars means a lot to many people, much more than the city standardizers realize. By their overzealous attempts at elevating standards they have pushed the cost beyond the reach of those requiring medical service and by this have played into the hands of the irregulars. Confidence: The patient feels that if you try to save his money you have his whole interest at heart and that he can trust you to look after his interest in every way. Psychology: Tell the neurotic but honest female that it is very obvious that she is just running around in circles. She is impressed that after all the matter must be very simple if you can decide the problem so easily. The tired business man, when he finds he can sleep again and is regaining weight, regains confidence in himself and his doctor.

There is a vast deal more to the practice of medicine than the study of somatic pathology. Few full time professors have found this out. By ignoring the importance of immediate symptomatic relief the young graduate lacks the ability to give bedside relief and he fails to understand the need of it. This, again, plays into the hands of the irregulars. Many a layman would rather have an osteopractor as an audience for his grunts than to have no audience at all. Sympathy, even if feigned and dumb, is better than no sympathy at all in the view of the apprehensive sufferer.

Confidence in yourself is necessary that you may like your job. You must like your job before you can go about your work with confidence and humanity. I would like to see a really sick highbrow standardizer. Among other reasons I would like to see if he would not yearn for a bit of human understanding rather than be scooted through a chute. Recently a friend of mine, a medical man of national reputation, went through a well-known clinic under an assumed name. He declared it was the chilliest journey he ever took,—not a human touch in the whole staff. The crying need just now is to standardize the standardizer. Make a requirement that every standardizing committee shall have at least one doctor on it who has at some time felt the human pulse, and I do not mean just the investigation of the radial artery either.

What has all this got to do with the high cost of medical care? Just this: Every effort is made to save the patient's money. The necessity for elaborate examination, taken on the average, is inversely proportionate to the clinical judgment of the doctor. Those of us who come from the vast common herd, have lived with them, prefer to live with them, know best their needs, are best able to judge our own problems. When we feel the pulse we use something more than the second hand of a watch. If the patient is Ford-minded, give him a ride in a Ford.

Keep the standardizers who know nothing of the practical side of the problem out of the way and we will solve our own problems. They do more harm than good by insisting on Pierce-Arrow transportation to the Valhalla of health for people with Ford-sized pocketbooks, with simple experiences and desires. George Ade says the way to uplift is to get underneath and to do this one must take his feet off the desk.

After all, the vital thing is the judgment and

humanity of the doctor and these things cannot be standardized, being congenital. The initial cost is not great and the upkeep less and as yet no means of taxing them has been found. Knowledge alone can be standardized. The whole problem of the relation of patient and doctor is included in the simple question: Would you like to take your own prescription? If you are willing to take it, you are on the right track; if not, you are just one more bandit who has missed his calling, or perhaps just the method of collection.

MISCELLANY

TENTH NATIONAL HOSPITAL DAY

Hospitals throughout the United States and Canada are beginning plans for the tenth observance of National Hospital Day, May 12, according to information reaching Dr. J. R. Morrow, superintendent, Bergen Pines, Oradell, N. J., chairman of the National Hospital Day Committee of the American Hospital Association.

While some institutions which have observed the day since its start are seeking new ideas, the majority of the hospitals will have "open house," reunion of babies, inspection of departments and other features which met with such success in previous years. Some of them undoubtedly have had the same experience as a hospital which decided to omit its "baby show" one year and found that the mothers, who had gathered in larger numbers than on the previous occasion, were greatly disappointed.

That more small hospitals will observe May 12 this year than in the past is the belief of some of the members of the national committee, owing to the tribute paid to small hospitals in rural sections by President Hoover in his endorsement of National Hospital Day.

Hospital councils in some cities focus all their attention at March and April meetings on plans for a joint observance of National Hospital Day. The Chicago Hospital Association is among those doing this at this time. This association, incidentally, already has been tendered time on two radio stations.

The national committee is in touch with large manufacturers and others using nation-wide radio hookups and hopes to extend the radio publicity given National Hospital Day last year. Many hospitals also are making arrangements for individual radio programs, as in the past.

Most of the hospitals conducting schools of nursing which will have a National Hospital Day program will give considerable attention to a presentation of facts about nursing education and nursing service, keeping in mind that May 12 is the anniversary of the birth of Florence Nightingale.

POSTGRADUATE EXTENSION COURSES FOR PRACTICING PHYSICIANS

A planned and systematized program of medical education for presentation to the members of the medical society by competent doctors, who have teaching ability, is the best means of keeping the medical profession informed and up-to-date. With this objective in mind, the General Extension Division of the University of Minnesota, in conjunction with the State Medical Association and the Medical School of the University, has organized and administered short courses for practicing physicians at the local home centers of the various medical associations throughout the state. All but four or five of the thirty-eight medical districts have, in the past, been taking advantage of this instruction offered by the University in the several medical and surgical branches.

A departure from the customary procedure of conducting these courses, to take effect this spring, has been announced by Dr. N. O. Pearce, Chairman of the Educational Committee of the Minnesota State Medical Association. This change is of a twofold nature: first, it envisages bringing before the doctors of the state a few of the interesting public health activities which are carried on in Minnesota; and, secondly, it contemplates offering entertainment in the form of informal talks in many fields of interest such as art, psychology, travel talks, etc.

For instance, a suggested program for this coming spring, to which Dr. Pearce has given the title "A Series of Colloquium Lectures" would be as follows:

- 1st Meeting. Conducted by the president and officers of the Minnesota State Medical Association, explaining the purpose and function of that Association.
 - 2nd Meeting. This meeting will be conducted by the Minnesota Public Health Association on some subject of interest such as "Tuberculosis."
 - 3rd Meeting. This will be a regular meeting on "Serum and Vaccine Therapy" for which the regular charge will be made.
 - 4th Meeting. Will be a regular meeting on some subject of interest such as "Heart Disease."
 - 5th Meeting. This will be a gratis meeting conducted by the Minnesota State Board of Health on some subject of special interest to physicians and surgeons.
 - 6th Meeting. A regular charge meeting on some subject such as "Obstetrics."
 - 7th Meeting. Will deal with the subject of "Dermatology."
 - 8th Meeting. This final meeting will be something of an entertaining or culture nature such as a popular lecture or entertainment scheduled through the Lyceum Bureau of the General Extension Division of the University of Minnesota; the expense of this will be borne by the University.
- The entertainment features might be stressed somewhat more than this program of lectures calls for. They might include such talks as "Uniform Endowment" by Dr. Herbert Sorenson; "Art" by Dr. S. Chatwood Burton; "British and American Humour," by Dr. Herbert Heaton; or a Popular

Lecture by some other member of the University Faculty.

This experiment should prove exceedingly interesting.

The postgraduate courses for the current year have borne remarkable results. Thirty-three local associations have organized as many short courses during this past fall and winter. Thirty-eight doctors, recruited from the three large cities of the state and the Mayo Clinic at Rochester, participated in these lectures. Their names, together with the topics which they treated are as follows:

- Dr. W. A. Fansler: "Diseases of the Rectum."
- Dr. R. T. LaVake: "Puerperal Sepsis."
- Dr. Fred Pratt: "Childhood Sinusitis."
- Dr. H. O. Altnow: "Nephritis."
- Dr. E. A. Loomis: "Colds."
- Dr. Henry Michelson: "Dermatology."
- Dr. G. R. Dunn: "Fractures."
- Dr. Moses Barron: "Hypertension."
- Dr. E. Bannick: "Cardiovascular Diseases."
- Dr. A. F. Bratrud: "Varicose Veins."
- Dr. E. T. Evans: "Orthopedics."
- Dr. G. N. Ruhberg: "Neurology."
- Dr. J. M. Hayes: "Varicose Veins."
- Dr. W. A. Jones: "Nervous Diseases."
- Dr. H. Z. Giffin: "Internal Medicine."
- Dr. O. H. Wangenstein: "Intestinal Obstructions."
- Dr. Henry Michelson: "Skin."
- Dr. E. M. Hammes: "Psychoses."
- Dr. F. J. Hirschboeck: "Internal Medicine."
- Dr. B. F. Davis: "Traumatic Infections."
- Dr. J. R. Manley: "Obstetric Forceps."
- Dr. A. W. Rowe: "Pediatrics."
- Dr. J. F. Fulton: "The Eye."
- Dr. A. H. Beard: "Metabolic Diseases."
- Dr. E. T. Herrmann: "Anaphylaxis."
- Dr. C. B. Wright: "Gastric Intestinal Diseases."
- Dr. Rood Taylor: "Rickets."
- Dr. E. C. Robitshek: "Fractures."
- Dr. S. R. Maxeiner: "Local Anesthesia."
- Dr. F. C. Rodda: "Pediatrics."
- Dr. W. C. Alvarez: "Gastro-Intestinal Diseases."
- Dr. A. R. Barnes: "Clinical, Pathological and Electrocardiographic Aspects of the Myocardial Degeneration."
- Dr. Horace Newhart: "Diagnosis and Treatment of Ear Diseases by the General Practitioner."
- Dr. N. M. Keith: "Hypertension."
- Dr. Boyd S. Gardner: "Pulpless Teeth."
- Dr. C. N. Hensel: "Diseases of the Heart."
- Dr. R. C. Logefeil: "Injection of Varicose Veins."
- Dr. P. S. Hench: "Arthritis."

This work has been conducted by the General Extension Division for several years past, and a great many members of the profession have attended the courses annually. They are unquestionably the best form of review work available to general practitioners. In the December number of the JOURNAL-LANCET, the plan of operation of these medical short courses was outlined in detail. The plan is also stated in the bulletin of Postgraduate Courses for Practicing Physicians which is issued by the General Extension Division, a copy of which may be secured by writing to the General Extension Division, University of Minnesota.

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—200.

Woman, 55, admitted to hospital September 18, 1929, complaining of pain in the right kidney region, fever, tenderness in the right flank. For the past two years she has had pain in the lower part of the back and in the right hip. This pain had been severe for the six months prior to admission. She was confined to bed the last two months.

Thirty years ago pus was drawn from the glands in her neck. Pleurisy on the right side 15 years ago. Influenza in 1928.

Physical examination: Poorly nourished. Heart and lungs negative. Tenderness over the right kidney region and over the right sacro-iliac region. Old arthritis of the wrists and ankles. Cystoscopic examination September 21 showed a bulging of the wall of the bladder in its posterior upper part, as though by pressure from an external growth. Urine from both ureters showed a little albumin and a few red cells. Pyelogram of the right kidney showed slight dilation and duplication of the pelvis.

Laboratory examination September 18. Moderate amount of albumin in the urine and a few clumps of pus cells. Blood: hemoglobin 78 per cent; red cells 4,400,000; leucocytes 13,550. Differential: polymorphonuclears 66 per cent; lymphocytes 30 per cent; monocytes 2 per cent.

November 4. Liver enlarged, hard, nodular, and extended three fingers below the costal margin. A mild jaundice was present. X-ray diagnosis, arthritis of the spine.

December 2, gynecologic examination showed nothing abnormal in the cervix, uterus, or adnexa but a mass the size of a large walnut was felt above and mesial to the right iliac spine.

Laboratory examination December 2. Urine: a few clumps of pus cells and a trace of bile pigment. Blood: hemoglobin 50 to 60 per cent; erythrocytes 2,480,000 to 3,450,000; leucocytes 12,600; differential: polymorphonuclears 74 per cent; lymphocytes 23 per cent; marked polychromatophilia; some nucleated reds. Sputum repeatedly negative for tubercle bacilli. Spinal fluid showed globulin 3+; otherwise negative. Basal metabolic rate varied from +19 to +39 at different times. Van den Bergh December 5 showed 7.5 mg. of bilirubin per 100 c.c. No Bence-Jones protein in the urine.

X-ray December 5. The bones practically all over the body showed marked diffuse decalcification. This was most prominent in the lumbar vertebræ, the sacrum, and the pelvis. A biopsy of the mass in the left clavicle was examined on January 21 and gave the diagnosis. Following this diagnosis intramuscular injections of karkinolysin were given, 1 c.c. daily.

About January 30 pathologic fracture of the left femur and of the left clavicle were noted. The patient became comatose about February 6 and died February 9.

Postmortem report: Moderate emaciation. Slight edema of both legs. No jaundice. Ascites, 500 c.c. of clear fluid. The splenic flexure of the colon is bound to the capsule of the left kidney and the tail of the pancreas by a mass of tumor tissue. The appendix is retrocecal and adherent. The liver weighs 2400 grams and is filled with tumor metastases. Tumor metastases over the pleural surfaces. The spleen weighs 370 grams; it is very firm and dark red in color. Microscopic examination shows diffuse carcinomatous metastases in the spleen. The gall-bladder is thick, fibrous, and contains many small calculi. The kidneys together weigh 200 grams; no definite evidence of disease.

The right ovary is 2x1x1 cm.; the left 3x2x2 cm. Both on section show hard whitish tissue which on microscopic examination proves to be carcinoma. A few small retroperitoneal lymph nodes contain carcinoma. The thyroid shows no disease. Numerous metastases of carcinoma in the bones all over the body with pathologic fracture of the left clavicle and the left femur and very marked destruction of the bodies of the lumbar vertebræ.

Diagnosis: Primary carcinoma of the ovaries. Metastatic carcinoma of the liver, visceral pleura, entire bony system, retroperitoneal and inguinal lymph nodes. Old chronic cholecystitis and cholelithiasis.

Comment: The interesting feature of this case is that the symptoms of the metastases in the vertebræ were the first clinical signs of the disease. The primary growth was so small that it did not produce symptoms. Metastases in the bones are frequently the first evidence of carcinoma of the ovaries. Karkinolysin had no apparent effect on the tumor; there were no areas of necrosis in the tumor.

Autopsy—25—676.

Man, 57, admitted August 15, 1925, complaining of urgency and incontinence of urine with weakness. Two years ago he had one attack of urgency which lasted only a few days. In June, 1925, he began to develop the present symptoms. During the four weeks previous to admission there had been almost constant dribbling; very poor urinary control; had difficulty in starting the stream but could urinate when making a special effort. Lost 40 lbs. in weight during the past year. Had a chancre at the age of 19 and was treated for syphilis at that time. His hair fell out in patches at the age of 25. No children by his first wife. Five children by his second wife and four of these are living.

Examination: The hair of the scalp was thin in spots. Pupils did not react to either light or accommodation. There was excessive dental caries. No palpable lymph nodes. Heart normal except for an occasional extra systole. Romberg positive; Babinski absent; knee reflexes absent; sense of position of toes absent; vibration and pain sense unimpaired; arm reflexes sluggish; abdominal, cremasteric, and ankle reflexes absent.

Patient was catheterized and 700 c.c. of residual urine removed on August 18. On the 19th 500 c.c. removed by catheter. Urine: specific gravity 1004 to 1010; trace of albumin; pus in one specimen. Blood Wassermann positive. Blood chemistry: urea nitrogen 17.73 mg.; sugar .117 per cent (August 19).

Spinal fluid clear; under normal pressure; Nonne negative; Noguchi negative; cell count 4; Wassermann negative.

Blood: hemoglobin 60 per cent to 50 per cent; erythrocytes 4,080,000 to 3,070,000; leucocytes 15,700 to 16,800; polymorphonuclears 71 per cent to 82 per cent.

Patient showed some mental disturbance. He became unconscious on September 6 and died the next day.

Post-mortem report: No edema. No fluid in the serous cavities. Heart 430 grams; no disease. Spleen 150 grams; no disease. Cloudy swelling of the liver. Bilateral pyelonephritis with infection of the pelvis and numerous abscesses in the cortex and medulla. Slight enlargement of the prostate. No obstruction at any point in the urinary tract. The mucosa of the bladder is thickened, reddish, and covered with grayish exudate.

Microscopic sections of the spinal cord show degeneration of the posterior columns.

Diagnoses:

1. Tabes dorsalis.
2. Paralytic bladder with bilateral suppurative pyelonephritis and cystitis.

Comment: This is one of the common causes of death in tabes. The destruction of the posterior rootlets of the spinal cord in the lumbar region interrupts the reflex arc, so that the patient does not know when the bladder is distended. The distension of the bladder gives rise to hydronephrosis and finally to infection.

Autopsy—25—358.

Man, 38. Illness began in December with a cold. Recurrence of the cold in January. Diagnosis of acute bronchitis. Cough persisted; was especially severe in the morning at which time he would raise as much as a wineglassful of blood streaked sputum. In February it was noted that his afternoon temperature rose at times to as high as 102°. Morning temperature was normal. Anorexia, loss of weight, frequent nausea and vomiting noted about the same time. Occasional afternoon chills. Middle of February began to have frequency of urination and nocturia. There was urgency, burning urination and pain in the urethra during urination. Middle of March he was unable to void because of pain.

In February a small hard papule was noticed on the right cheek. A short time later a small lump about the size of a dime appeared beneath the papule in the substance of the cheek. This lump increased in size. It broke open in the latter part of March, discharging two tablespoonfuls of pus. Pus continued to drain from the area into the mouth. Early in March a gland was noted in the right cervical region. This enlarged progressively during the next month and a half.

Examination about April 1 showed a well developed, well nourished individual. The right submaxillary gland and the aforementioned right cervical node were enlarged, the latter the size of a walnut; it was firm and not movable. No other palpable glands. There was a small ulcerated area on the inner aspect of the right cheek at the opening of Stenson's duct, from which purulent material drained. Three small tumors were noted in the skin: one in the left abdominal wall, one on the anterior surface of the left thigh, and one on the left shoulder. These were of medium soft consistency and not movable. The one on the thigh fluctuated. The right ankle was swollen, reddened on the medial surface, and very tender and painful.

The chest showed dullness on the right to the third rib anteriorly and to the fourth dorsal spine posteriorly. Expiration was prolonged over this area. There were fine moist râles after coughing. The left lung was normal.

The urine showed a faint trace of albumin, many pus cells, no tubercle bacilli. Blood, April 2: red cells 3,600,000; hemoglobin 75 per cent; white cells 21,000. April 14, white cells 23,200; 91 per cent polymorphonuclears; 7 per cent lymphocytes; 1 per cent eosinophils. P. S. P. April 7, first hour 8 per cent; second hour 12.5 per cent; total 20.5 per cent. Sputum examined daily for tubercle bacilli; none found.

X-ray of chest April 4: dense homogeneous shadow involving right lung from apex to fourth rib; lower margin of shadow rather clean cut and rounding in outline; no definite cavity made out. April 20, no apparent change in dense area previously mentioned, but a fine mottled parenchymal infiltration disseminated through both lungs was present. May 6, plates showed very marked extension of process throughout both lungs with involvement of all portions of both lungs.

Temperature April 6 to May 11, 99.4° A. M., to 104.8° P. M. During the last five weeks of his illness the patient developed some 24 or 25 other sub-

cutaneous tumors over the surface of the body, from 3x1.5 cm. to 10x10 cm. in size. These at first were rather firm but after a few days became softer and increased in size. The skin overlying the area at first was apparently normal; later became red. A number of the areas were aspirated and from them very thick sanguineous purulent material was obtained. The swelling on the right ankle opened spontaneously and 6 oz. of pus drained from it. The discharge from the ankle continued until the time of death. Urinary symptoms were not quite so marked during the last month. Rectal examination April 8 showed prostatic hypertrophy; prostatic massage caused pus to appear in the urethra. April 15 hemoptysis of a tablespoonful of blood. April 22 pus appeared in the rectum following irritation. May 2 respirations very labored; cough more severe; a number of gagging spells. May 9, very weak; cyanotic; difficult respiration, at times Cheyne-Stokes type; no radial pulse made out. Very irrational. Death May 11.

Postmortem report: Numerous large fluctuating tumor masses scattered over trunk and extremities; majority of these are 5 or 6 cm. in diameter and several have been incised. They discharge pus when opened. Upon the body three other abscesses are found, two in the midline of the abdomen and one along the right costal margin. No peritonitis. Extensive fibrous adhesions in the pleural cavities but no free fluid. An abscess 1.5 cm. in diameter in the wall of the left ventricle. The lungs weigh about 1300 grams each. Both show extensive consolidation with large cavities, especially in the apical portions. Extensive fibrosis. Numerous tiny nodules with opaque centers resembling caseous tuberculosis. The spleen weighs 500 grams; it contains one abscess. The liver weighs 2600 grams; numerous very small abscesses. Each kidney weighs 200 grams; multiple small abscesses are found throughout the parenchyma; suppurative pyelitis in the right kidney. Numerous abscesses in the prostate. Extensive suppuration in the right side of the neck. Bones not opened up.

Microscopic examination shows blastomycosis. The blastomycetes are found in the abscesses in considerable numbers.

Diagnosis: Generalized blastomycosis.

Comment: The disease was probably primary in the lungs. From the lungs it metastasized to the skin and the various other organs. On account of the extensive pulmonary involvement with cavities, this disease is frequently mistaken clinically for tuberculosis, and even at postmortem the resemblance to tuberculosis is striking as far as the lungs are concerned.

Autopsy—25—508.

Man, 36, admitted to hospital June 3. Eight years ago he had a spontaneous fracture of the left hip, while getting out of a car. At about the same time he had extreme pain in and about the knee joint,

accompanied by marked swelling. The knee joint was opened and a sinus was found extending up toward the thigh. This was allowed to drain and finally healed over. After the stay in hospital the patient's condition apparently improved greatly and he was able to walk.

Three years ago a great deal of pain was experienced in the left hip, accompanied by swelling and redness, and the surgeon who examined this hip considered operation necessary. It was said that the joint on X-ray showed the presence of a marked destructive process. At operation the head and neck of the femur were removed. This operation was more or less successful and for over two years the patient was again in fairly good health and able to walk, although the latest examination showed that there was apparently no hip joint present on the left side.

Shortly before admission to the hospital, while driving an automobile, the patient experienced a severe sudden pain in the right hip and this pain was so extreme that he had to be taken to the hospital on a stretcher. The X-ray picture of this hip was practically the same as that of the left. The right hip was operated upon but this operation was unsuccessful and there was a persistent large sinus which drained through the lateral portion of the thigh through the gluteal muscles. During the stay in the hospital the patient had persistent albuminuria and hyaline casts were noted in the urine. The majority of the urinalyses showed albuminuria to be marked.

About two weeks before death the patient began to have distress and a feeling of weight and pain in the region of the rectum. About ten days before death he discharged a considerable amount of pus by rectum, after which he was somewhat relieved. The sinus through the lateral gluteal region drained pus constantly until the time of death.

Respiration during the last few days of life was of the Cheyne-Stokes type, so marked at one time that the patient was thought to be dead and was taken out of the room on the way to the mortuary.

The blood showed 70 per cent hemoglobin; 3,600,000 red cells, with moderate anisocytosis and poikilocytosis. The blood Wassermann was positive. The spinal fluid Wassermann was negative.

Postmortem report: Well nourished adult male. Large sinus in right gluteal region which admits two fingers and extends into the hip joint. Extensive adhesions throughout the peritoneal cavity but no active peritonitis. Old pleuritic adhesions. The heart weighs 300 grams; no disease. Large perirectal abscess extending from the right hip joint; marked suppurative osteomyelitis of the femur, innominate bone, and tibia. Acute hemorrhagic cystitis. Marked amyloidosis of the liver, spleen and kidneys.

Comment: Death was apparently due to general amyloidosis resulting from chronic suppurative osteomyelitis.

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REDUCTION OF THE MEDICAL EXPENSE OF THE PUBLIC

The editor, in looking over the March issue of *Good Housekeeping*, discovered a very good article called "Lowering the High Cost of Babies." Incidentally it was a résumé of what has been said and done on the reduction of medical expense. This is nothing new. They have been working on this subject for a good many years and especially the past few years. Whether anything has been accomplished or not is a question, but anything on that order is worth while considering. The first question raised in the above-mentioned article is "Can a home be a real home without children?" The editor, being childless, is hardly in a position to pass a definite opinion except that he thinks it is possible for a home to be a home without children. Then, too, most people do not consider the subject at all from an economic point of view but from the personal side; in some instances the wife is not a childbearing woman, and at times that is the only way we can explain it, that is, she never becomes pregnant and the whys and wherefores of this are many times difficult to ascertain. On the other hand, the people who live in modest circumstances may have a child every year; a case was recorded here in Minneapolis not long ago of a man seventy-five years

old who was presented by his wife with his twenty-first child! They happened to be suited to one another in every way. But think of the expense of having medical attention and nursing care for such a family.

Nowadays most everyone goes to the hospital for maternal care and that adds to the ordinary expense. In former days the obstetrician had a fee of fifteen to twenty-five dollars but now it runs between one hundred and three hundred dollars, which makes it almost prohibitive to employ an expert obstetrician. Still they get along, as there are enough people with money who can bear such expense; but such people often have but one child, so in that way they keep the cost of reproduction down to a moderate level even at the higher fee. More and more women go to hospitals for care at the time of delivery, and it all adds to the expense. Then, after a while, if they are having many children, they stay at home for confinement and employ the family physician, and it is asserted by a good many authorities that the old family doctor is coming back into his own but it is not proved by the population of the hospitals. Young wives, particularly, having their first experience in confinement feel safer and better when they are being taken care of in a hospital, where either the obstetrician or the interne may be readily called upon and thus an easier delivery is carried out.

The fact that most mothers want some assistance in raising their babies adds to the expense, too, as they have added to it the fee of the pediatrician; but this is seemingly a necessity, from the pediatrician's point of view. The baby doctor is looked upon by his colleagues and patients as a great necessity and he certainly does wonders in regulating the care of the diet of the child. But all parents are not able to avail themselves of his advice due to the cost. The amount of milk that the mother usually supplied has been diminished gradually through the last few years and many babies are brought up on artificial feeding, and that is adding additional expense to the rearing of well developed and well brought up children. Then, in time, they develop tonsils and adenoids and this means a little more expense, a little more suffering for the time, but it is thought by many that the tonsils and adenoids should be removed as early as possible, and consequently a great many children have two or three removals before the tonsils and adenoids really subside. So it is questionable what to do under the circumstances,

and, again, the old family doctor may step in and advise what is best.

These children, too, need dentition care, and straightening of teeth for those born with irregular teeth, all of which requires skillful mechanical treatment. But fortunately there are some children who pass through school under the observation of the school doctor, the school nurse, and the school teacher and yet get by, somehow, without having any of their organs removed. The efficiency of the family welfare circle does a great deal for the bringing up of children, too. Sometimes this triad above mentioned take the child to the throat specialist, the nose specialist and other specialists and the outcome of it all is expense. But they think, as we think, that the child is well worth bringing up even if it is expensive business. The tonsil and adenoid removal, and particularly the tonsil removal is not as frequent as it has been, owing to the fact that so many children have grown up with presumably large tonsils, and for some reason or other have outgrown them or gone through their entire lives without having their tonsils removed.

Still another expense is added to the raising of the child when the consultant is brought in to look the child over, and as he may discover something radically wrong that has been previously overlooked his consultation fee should be paid. But this, of course, is presumed to be a necessary expense only in case of serious illness, and not for every trifling thing the child complains of and which the family doctor can take care of just as well as anyone else. This consultation matter has increased very largely among the new generation. Somehow it was a very rare occurrence formerly. In the country this is carried out in a little different way. Almost every community has a community hospital and there a group of physicians are gathered together who send for their confrères in time of need, and doubtless they do much good work in this way. They know the community and its people and know a good deal more about their patients than they are given credit for. But at the same time patients are sent down to the larger cities occasionally or to clinics, and that entails additional expense which at times may be almost prohibitive; but any city doctor understands and voluntarily makes his charges to fit the case, which is the only just way to treat a patient. So it is undoubtedly true that many young people who long to have children are restraining themselves or using con-

traceptives, because they feel they cannot assume or incur the responsibility which they cannot see their way clear to discharge; hence at this time, and for a longer period, perhaps, the question of bringing up a child is a debatable one. But when you hear of women who have from eighteen to twenty-four children it would seem to the writer that they were just slaves to their husbands. However, the bringing up of twenty-four children is simplified when one considers that the oldest child generally looks after the younger ones and thus relieves the mother of some of the care and watchfulness. In large families all of them seem to feel a certain responsibility for the younger ones, which is a fortunate circumstance.

The old family physician who for a time has disappeared is now coming back into his own both in the city and in the country. "The medical profession itself is taking serious cognizance of the situation. Only a few months ago a medical and sociological commission on the high cost of medical care began its deliberations, which will consume the better part of a million dollars and five years time, but in that time both commissions should learn a great deal about lowering the cost of the child without disturbing its normal development." To go back to the family doctor, this is becoming a very important question not only to medical men but to the community at large, to have some man who is properly educated and who cheerfully develops himself along different lines, with the result that outlying communities that are almost out of reach of doctors get along well with the attention of the family physician. Many people in the larger cities complain that it is next to impossible to find a doctor who is not a specialist, but that is not true when you come to consider it and particularly in the larger cities. There are any number of generally educated men who are educated for a purpose, that is, the care of the sick under whatever circumstances. The writer thinks he remembers telling in *THE JOURNAL-LANCET* some time ago the story of a doctor located at a great distance from any other doctor and he was called upon to deliver a woman in labor. Something happened, and he was obliged to make a forceful delivery, so he tied a halter around the neck of the child and delivered it that way, without the use of forceps, and while this may seem both crude and cruel both mother and child lived and got along nicely. Sometimes the doctor has to resort to extreme measures of his own inauguration, and he is looked up to

by the general public as a man quite equal to any occasion.

ROSES AND VANDALISM

Minneapolis has recently put on a great show, two in fact. The first one was the flower show, put on by the National Association of Florists, and truly, to anyone who saw it, it was an eye-opener. Flowers from various parts of the country were exhibited, including rare orchids and tropical plants, cacti, and the night blooming cereus—all rare sights in this part of the country. Roses in profusion, and in many varieties, some with stems seven feet long, were shown, as well as tulips in profusion, of all sizes and colors, lilies of many varieties, including the calla lilies, amaryllis, and Easter lilies, some iris, and crocuses. On the main floor were several gardens which looked like actual walled-in gardens and gave a wonderful effect as they contained all types of flowers, flowering shrubs and small ornamental trees. Some odd plants attracted considerable attention, particularly the "Bird of Paradise" flowers, "the Devil's Tongue," the "Stag-horn" fern, rat-tailed cactus, and the "Crown of Thorns" cactus. Small trees, including several varieties of the acacia, dog-wood, magnolia, Japanese cherry, and peach, and some vines, added great beauty to the collection assembled. Azaleas, rhododendrons, and hydrangeas in massed effect were very colorful and pleasing to the eye, and the general effect was beautiful.

Minneapolis and the officials of the flower show did a very generous thing in admitting all school children free, thus giving them a real insight into what beauty means. The rock gardens as well as the other gardens were wonderful in construction and general attractiveness and looked as if they were there for life, yet in a week they will all be removed. The Auditorium was crowded at all times, particularly evenings, when 23,000 or 24,000 people thronged the place. One can imagine the crowding. The basement as well as the entire first floor was filled with plants and cut flowers of great variety and beauty. The National Flower and Garden Show closed at the Auditorium Sunday night after more than 160,000 persons had visited it and viewed the \$500,000 in floral exhibits, breaking all attendance records for similar exhibitions in Minneapolis.

The next interesting but unpleasant feature which has been heralded thruout the Northwest, and which came at the same time as the flower

show, is the vandalism which has been current in Minneapolis recently and which has involved boys from six to eighteen years of age. Among other depredations they practically destroyed the contents of a house which belonged to a former Minneapolis physician, at least they succeeded in breaking everything that was breakable, and doing other damage to the amount of at least twenty-five thousand dollars, and probably more. Some of the same gang held up a pie wagon which was loaded with pies and after eating all they could they took the rest around to the Quaker Church and plastered the walls and floor with the remaining pies and tore the cushions and seats into bits. They were promptly apprehended and as promptly escaped for there were no facilities for keeping them at the Red Wing school or the Glen Lake school. The judge sentenced them to six months confinement when they should have had a term of sixty years imposed on them and they should have been forced to live with their parents all that time! Out of the entire number of boys only one boy's father stood up for law enforcement; the rest were evidently not interested! They had apparently brought up their children in the same way, without surveillance, without correction for their misdeeds, and perhaps with no effort on their part to see that the children were regular in their school attendance. It is one of the most disgraceful things that has happened in the city and it is a reflection on the citizens of Minneapolis to have such a thing heralded throughout the United States. Perhaps some day the parents of these law-defying children will wake up to the necessity of training their children, but most of them are morons, both parents and children, and consequently not much training can be expected. Parents who are more or less feeble minded and their children who are more or less degenerate will always be unmanageable. This has been the greatest lesson we have had for a long time and it would seem that such children should be taken into custody and the truant officers should know something about such families—but this, of course, is an impossibility. How any parent can look a man in the face and admit the lack of discipline in his own family in children of six years of age and a little older is more than the editor can understand, but it shows us something of the tendency in the world. If the parents knew how they could very early begin training of the child, within the second or third day, even, after birth, perhaps they would realize the worth of such

early and efficient training, but they either forget to train the child or lack the courage, and the result is that these children grow up defiant and without any respect for authority and after a time it is too late to train them. Happy is the family where they have children who respect the rights of others, the property of others, and who know, even in a small way, what to do for the care of themselves.

NEWS ITEMS

Dr. C. D'Arcy Wright returned, March 22nd, from a stay in Miami, Florida.

Dr. Robert Madland, of Pequot, Minn., was married recently to Miss Etta Marie Nielsen.

The Minnesota Surgical Society held their annual meeting in Rochester, Minn., March 19th.

Dr. A. J. Buffaloe, of Mitchell, S. D., aged 71 years, died recently of injuries received from an accident.

Dr. and Mrs. C. S. Bobb, of Mitchell, S. D., have returned from a visit of several weeks in Miami, Florida.

Dr. H. S. Stratte, physician and surgeon of Pine City, Minn., for the past four years, has moved to Windom.

Dr. A. H. Stoll, Brookings, S. D., recently moved to Oxnard, Calif., where he plans to make that state his future home.

Dr. Arthur W. Guest, formerly of Jamestown, N. D., is now located on the staff of the Ohio State Hospital, at Athens, Ohio.

Dr. Daniel Cady Darrow, one of the pioneer physicians of Moorhead, Minn., passed away recently at the ripe old age of 80 years.

Dr. F. J. Austin was employed as health officer for Pennington County, S. D., at a recent session. Dr. Austin is replacing Dr. A. N. Crain.

Dr. George A. Gray, Spokane, Wash., a graduate of the Minnesota University Medical School in 1898, died last month, while on a trip to Honolulu.

Dr. Archa E. Wilcox and Dr. Geo. D. Eitel announce the opening of new offices, X-ray and clinical laboratories at the Eitel Clinic, Minneapolis.

The annual convention of the Minnesota State Medical Society will be held in Duluth, July 14th

to 16th instead of a month earlier as had been planned.

Dr. Samuel Miller, of Medina, N. D., has moved to Sanitor, S. D., where he has accepted a position with the South Dakota Tuberculosis Sanatorium.

Dr. G. A. King, of Baker, Mont., died March 18th, in a Miles City Hospital. Dr. King was 48 years old and graduated from the University of Minnesota.

Dr. H. L. Youtz, who has been located for many years at Brookings, S. D., has moved to Des Moines, Iowa, where he has opened offices for general practice.

Dr. E. E. Zemke, who has completed his internship at St. Mary's, Duluth, will locate in Fairmont. He will be associated with Drs. F. N. and R. C. Hunt.

Dr. Joseph E. Campbell, Melrose, Minn., who had been honored by being elected mayor of that city for the past twenty years, died last month at the age of 77 years.

Dr. I. D. Tiedmann, formerly of Heron Lake, Minn., but now of Glendale, Cal., was one of the principal speakers at a recent meeting of the Los Angeles County Medical Association.

Dr. and Mrs. J. E. Shull, of Alpena, S. D., returned March 9th, after having spent over two months with relatives and friends in Florida. They enjoyed a wonderful vacation and trip.

Drs. F. W. Bilger, W. G. Crandall and D. W. Seawright, all of Hot Springs, S. D., announce the organization of the Black Hills Clinic and the opening of the Black Hills Hospital this month.

Announcement has been made of a gift of \$30,000 to the Vermilion, S. D., Hospital, by Mrs. M. D. Thompson and her son in memory of the late Mr. Thompson. Thirty beds will be installed.

Dr. and Mrs. Chas. H. Mayo, of Rochester, Minn., announced the engagement, April 5th, of their daughter Esther to Dr. John Hartzell, of Rochester, son of Mr. and Mrs. Thos. Hartzell, of Minneapolis. The marriage will take place in September.

The monthly meeting of the Huron Medical Society, of Huron, S. D., was held April 10th. The program consisted of papers by Drs. R. A. Buchanan of Wessington, S. D., and H. L. Saylor of Huron, S. D.

Drs. F. H. Stangl, P. E. Stangl, C. B. Lewis and W. L. Freeman, who have been practicing under the names of Drs. F. H. and P. E. Stangl and Lewis clinic at St. Cloud, Minn., have joined and will practice in the future under the name of Lewis-Stangl Clinic.

The last meeting of the Sioux Falls District Medical Society, Sioux Falls, S. D., was held April 8th. Dr. John Prentiss Lord, of Omaha, one of the outstanding orthopedic surgeons of the Middle West, talked on "Deformities and Disabilities of the Lower Extremities."

Dr. and Mrs. W. C. Fawcett, Starkweather, N. D., and son Robert returned this month from a trip to Miami. While on this trip they visited Mexico and Cuba. They left North Dakota early in January, motored to Texas and then to Florida. Dr. Fawcett is a past president of the North Dakota Medical Association.

Professor Georges Portmann will give a five-week intensive postgraduate course in ear, nose, and throat surgery, at the University of Bordeaux, France, commencing July 21, 1930. This course is open to American physicians. For information apply to Dr. L. Felderman, Mitten Building, N. W. Cor. Broad & Locust Sts., Philadelphia, Pa.

Medical authorities from many great universities of Europe and the United States will gather in Minneapolis, July 7 to 18, to take part in a 10-day symposium at the University of Minnesota, devoted wholly to the discussion of a single organ, the kidney. The gathering will be unique in that it probably will be the most extensive symposium of the kind ever devoted to a single organ, according to Dr. Hilding Berglund, head of the department of medicine, who will direct it. It will be one of a series of special projects during the Minnesota summer sessions. More news of this symposium will appear in future issues of THE JOURNAL-LANCET.

A meeting of the Sixth District Medical Society was held in Bismarck, April 8, 1930. Following a dinner the regular business meeting was held at which was discussed arrangements for the State Medical Society to be held in Bismarck in May, and instructions were given to the delegates to the state medical meeting regarding a Basic Science Law, the Annual Registration of Physicians, and a Woman's Auxiliary to the State Medical Society. On the Scientific Program appeared Major John R. Oswalt, M.C., Ft. Lin-

coln, N. D., who spoke upon the subject "Medical Service in the U. S. Army." There was a brief discussion by Dr. E. P. Quain. Next was shown a movie film, "Surgical Treatment of Peptic Ulcers." Dr. M. W. Roan discussed the film as it was presented.

DR. C. EUGENE RIGGS

Dr. C. Eugene Riggs, of St. Paul, died on April 3, 1930, on his way home from Florida where he has been spending the winter months with his daughter and son-in-law. He had not been well for the past year.

Dr. Riggs was really the first neurologist in Minnesota—and the editor trailed along afterward. He held a position in the University Medical School of Minnesota as professor of Nervous and Mental Diseases in the Medical Department for twenty-five years. He was at one time president of the Minnesota State Medical Association (1920), and for ten years preceding the organization of the Minnesota Board of Control he was chairman of the State Lunacy Commission and instituted many reforms in the State's care of the insane.

Dr. Riggs is survived by a daughter and a nephew, Dr. Charles R. Ball, of St. Paul. Mrs. Riggs died some years ago from heart disease.

The Lymanhurst School and Clinic for Tuberculous Children

On April 23rd the Lymanhurst School and Clinic for Tuberculous Children will celebrate the April campaign for the Early Discovery of Childhood Tuberculosis with an all-day event.

From 10:30 A. M. to 12:30 M. a demonstration will be given of the school activities of Lymanhurst, followed by brief talks upon its various phases of interest.

At noon, a buffet luncheon will be served to visiting guests and faculty.

At 1:30 P. M. busses will leave Lymanhurst for a visit to the Children's Preventorium at Glen Lake. Afternoon tea will follow an inspection of the building.

At 7:30 P. M. the Annual Lymanhurst Banquet will be held at the Nicollet Hotel.

Dr. Carroll R. Reed, Superintendent of the Minneapolis Public Schools; Dr. Wm. A. O'Brien, of the University of Minnesota; Dr. Stuart Pritchard, of the Battle Creek Sanitarium, and Dr. Jay Arthur Myers, of the Lymanhurst Faculty will be the speakers of the evening.

The Health Council, 324 Citizens' Aid Building, will be in charge of the celebration. Apply there for tickets to the complimentary luncheon at Lymanhurst, to the Glen Lake bus ride, and for tickets (\$2.00 each) or reservations for the banquet. Please do this early.

The Minnesota Radiological Society

The Minnesota Radiological Society, a new organization for the study and advancement of radiology, held its first formal meeting at the Mayo Clinic, Rochester, Minn., on March 1, 1930. The following program was prepared by Dr. B. R. Kirklin.

1. "Roentgenologic Manifestation of Malignant Disease in the Colon," by Dr. H. M. Weber.
2. "Gastro-Jejunal Ulcer," by Dr. J. D. Camp.
3. "X-ray Studies on Tuberculous Spines in Children," by Dr. R. K. Ghormley.
4. "Mediastinal Empyema," by Dr. Jacob Sagel.
5. "Roentgen Diagnosis of Plural Effusions," by Dr. L. G. Rigler.
6. "Specific Radio Sensitiveness of Cells and its Significance to Radio Therapy," by Dr. A. U. Desjardins.
7. "A Radium Technique in the Treatment of Carcinoma of the Cervix Uteri," by Dr. R. E. Fricke.
8. "Results Obtained from Irradiation Therapy in Cases of Carcinoma of the Cervix Uteri," by Dr. H. H. Bowing.

A banquet was then held at which the following addresses were given :

"Use of Iodized Oil in Gynecological Diagnosis," by Dr. L. M. Randall.

"Preliminary Report of Intravenous Urography by Means of Uroselectan," by Dr. C. G. Sutherland and Dr. W. F. Braasch.

The next meeting will be held in Duluth, Minn., in connection with the meeting of the Minnesota State Medical Association.

LEO G. RIGLER, M.D.
Chairman

CLASSIFIED ADVERTISEMENTS

Exercising Machine for Sale

Exercising machine never been used will be sold for half of list price. Address 669, care of this office.

Locum Tenens Wanted

Experienced physician desires locum tenens for a few months. Licensed in Minnesota. Address 702, care of this office.

Locum Tenens

At liberty after May first. Experienced in general practice and surgery. South Dakota preferred. Address 709, care of this office.

Wanted

Physician registered in South Dakota for locum tenens, during month of July, in Black Hills town. Address 701, care of this office.

At Liberty

Surgical postgraduate nurse, at liberty after April 15. Ability as operating room supervisor or scrub nurse. Can give references. Address 706, care of this office.

Doctor

We can help you to sell your practice—find location—assistant—salaried position. Address Central Physicians Bureau, 1010 Equitable Bldg., Des Moines, Iowa.

Ultraviolet Ray Lamps for Sale

Three Ultraviolet Ray Lamps. All brand new and will be sold at half price. Description and prices can be had by addressing 668, care of this office.

Position Wanted

Young girl would like position in doctor's or dentist's office. Good education and neat appearance. Free to accept position at once. Address 704, care of this office.

Location Wanted

Physician and Surgeon, graduate of University of Minnesota, has had hospital experience. Willing to buy equipment. Free after July first. Address 696, care of this office.

For Sale

General and surgical practice in small Wisconsin city. Hospital facilities for surgery. Good dairying community. Modern seven room house and office equipment including X-ray. Terms. Introduction. Address 703, care of this office.

Wanted

Superintendent for up to date 12 bed hospital in South Dakota town of 1400. State experience as to surgery, anesthetics and laboratory work in first letter. Give height, age, weight and religion, also send photo. Address 708, care of this office.

Position Wanted

X-ray technician and physio-therapist with experience. Can do bookkeeping, shorthand, dictaphone, typing. Experience in Minneapolis hospitals and clinics. Will accept temporary work. Moderate salary. Address 692, care of this office.

Wanted

Locum tenens for May, June and July, in North Dakota town. Good roads, county seat, lucrative practice, unopposed. Married man preferred. Rent, residence and office, and take all you make. Am taking special training course. Address 710, care of this office.

For Sale

Twenty years established practice, paying well. Town of 1200 on R. R. in progressive diversified farming territory. Nominal sum for excellent office location; will introduce thoroughly. Nothing to sell. Much EENT, optical and surgical. Address 707, care of this office.

Location Wanted

Laboratory technician would like to locate in Minneapolis or Montana or Dakotas. Can do general laboratory work, blood counts, blood chemistry, cultures and smears, basal metabolism, electric cardiogram, tissue work, and Kahn tests. Address 693, care of this office.

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PEPTIC ULCER*

BY LOWELL D. SNORF, M.D.

CHICAGO, ILLINOIS

The successful treatment of any pathological state is so intimately related to the etiology that a lack of knowledge of the cause of a disease is to treat by empiricism. We are justified in advising the use of certain methods, if, after careful scrutiny, experience will continue to sanction them. The actual cause of gastric and duodenal ulcer is not known. We believe that a certain sequence of events carries through the history of an ulcer which in consequence relates its pathogenesis to several factors.

There is a decided difference between the acute ulcer as observed clinically or experimentally and the chronic peptic ulcer. Laboratory workers have been able to produce superficial ulcers in the stomach but have had only slight success in producing a chronic lesion from these acute ones. Several workers, notably Mann and Wolfer, have been able to produce a chronic ulcer by certain operative or other measures. In these instances the ulcer seems to have resulted either from trauma or digestive action of the gastric juice, or a combination of both, or from a change in the arterioles of the gastric mucosa. Mann's work suggests that a gastric juice insufficiently neutralized can, plus a factor trauma, produce a chronic indolent ulcer which may conduct itself much as a clinical ulcer does, especially as regards healing and scar tissue formation and perforation.

Morton following Mann's technic of "Surgical duodenal drainage" has continued the experiment and has succeeded in producing chronic lesions in the stomach. He concludes that there seems to be both a chemical and mechanical factor. The lesion regularly appears when there is a disturbance in the acid-alkali balance and is located in the region of greatest trauma—the lesser curvature and pyloric antrum.

The peculiar anatomic distribution of clinical peptic ulcers suggests that they are due to trauma and to the digestive action of the gastric juice. They occur, however, in any portion of the stomach, in the lower end of the esophagus and in the first portion of the duodenum, whenever gastric juice is present, but they are seldom found in that portion of the duodenum bathed by the alkaline bile and pancreatic juice. They are most common in that part of the stomach and duodenum where there is a greater amount of trauma.

Rosenow, Haden and Bohan, Rivers and others have shown a close relationship between focal infection and peptic ulcer. Some of these observers have been able to produce peptic ulcers in animals by injecting cultures made from abscessed teeth, tonsils and other foci of infection in patients having ulcers.

The peculiar seasonal recurrences and relationship of symptoms to dietetic indiscretions suggest both a metabolic and physiologic origin for the disturbance. Some work has been done

*Read before the Aberdeen, S. D., District Medical Society at the Annual Meeting, January 28, 1930.

which indicates a chemical instability resulting in an acid-base imbalance.

An allergic phenomenon appears likely and would seem to bear out the experience of Ivy, who suggested the production of certain ulcers on this basis. Instances of food idiosyncrasies are probably explained in the same manner.

I have observed a young lady with a gastric ulcer whose symptoms developed very promptly after eating lobster. She had noted many times previously an unusual gastro-intestinal upset following the ingestion of certain types of sea-foods. I have also had occasion to study several cases of gastric ulcer developing after a severe migraine attack or, as in one instance, associated directly with the attack. From these various observations one must consider the allergic phenomena as a distinct possibility in the causation of peptic ulcer.

An impression gained from observing clinically the ulcer from its inception is that some metabolic disturbance or perverted physiologic process occurs which interferes with the normal continuity of the mucous membrane, and that this denuded or infected area is rendered abnormally susceptible to the digestive action of the gastric juice.

The practical treatment of peptic ulcer demands a consideration of several distinct factors, one of the most important being an accurate diagnosis. This diagnosis must most of all satisfy the question, "is ulcer present?" Too often the symptoms and findings of so many other conditions are so frequently confused with that of peptic ulcer that it demands more than casual consideration. There is more to the diagnosis of ulcer than a mere fragmentary history, positive X-ray report or point of tenderness. This lesion is too important an economic factor in the life of a patient to be overlooked or erroneously diagnosed. Little difficulty is encountered in the diagnosis of a chronic duodenal ulcer with such evidence as chronicity, periodicity, hemorrhage, vomiting and food relief, but the lesion that is too likely to be overlooked is the one presenting symptoms for the first time, with perhaps few symptoms and no conclusive X-ray evidence. Here the investigation is often too casual, the diagnosis inaccurate and the treatment entirely symptomatic.

This early lesion is the one to be recognized as peptic ulcer instead of being diagnosed as hyperchlorhydria, hyperacidity, gastritis, or worse still—chronic appendicitis. It is true that some functional disturbances of the gastro-intestinal

tract may simulate the ulcer syndrome, but if a proper interpretation is made of all the findings present, little difficulty will be experienced in arriving at a proper diagnosis.

Assuming now that we have made a diagnosis of ulcer, early or chronic, let us proceed to the next consideration, one of equal importance to that of direct diagnosis—what complications, if any, are present; is cancer probable? If the lesion is in the duodenum then there is scarcely any possibility of cancer complicating the ulcer, but if we are dealing with a gastric lesion, then our attention must be directed to the possibility of serious complication. We must realize the relationship between the two lesions, but more important still is the differential diagnosis between ulcer and carcinoma. How frequently does carcinoma develop in the base of a chronic ulcer? We are told by one group of observers that there is evidence of co-existing pathology in 70 per cent of the cases of gastric carcinoma. Yet an eminent pathologist states that he has never observed a carcinoma developing on the base of a chronic ulcer. I have had the opportunity of observing only a few patients with unquestionable gastric ulcer histories who later succumbed to carcinoma. Rarely is one able to observe a change in the physical, laboratory and X-ray findings of a patient in whom the ulcer is undergoing malignant degeneration and, of course, most unusual circumstances would have to be present in order to permit such a sequence of events, for in such a case the possibilities of carcinoma should long have been recognized and the patient operated upon. The most difficult type to recognize, although fortunately of rare occurrence, is the acute cancerous ulcer, *ulcus carcinomatosum*, which may produce a typical chemical distress, associated with high gastric acidity. This lesion may present findings quite similar to the peptic ulcer, but where an ulcer will show marked change in contour on X-ray examination after ten days to two weeks of careful management, the malignant lesion will show no diminution in size. In addition, if there is persistent occult blood in the stools and the distress is not entirely controlled by medical management, then there is reason to suspect a carcinoma.

It may be fair to consider every gastric lesion as a potential malignancy, but we must not let the bugbear of malignant degeneration overcome our sense of fairness to the patient. To treat a gastric ulcer surgically solely because of fear of malignancy, is to increase the mortality beyond

that reasonably expected in actual carcinomatous degeneration.

Pyloric obstruction is the most common serious complication encountered. This will often be associated with vomiting but may be suspected when the distress of the ulcer continues to the following meal or when present at midnight or later. It will be proven by an increased aspirated amount following an Ewald test breakfast or food retention after a seven hour motor meal or by X-ray showing delayed emptying of six hour barium meal. The obstruction is usually due to spasm and edema of the pylorus, less often to actual scar tissue narrowing.

Excessive gastric secretion is commonly associated with pyloric obstruction and will have a marked influence on planning of subsequent management.

It must be obvious, therefore, that to make a definite diagnosis one should develop a definite routine, which will incorporate the following: Elicit a careful history, make such a complete examination as will bring to light possible foci of infection which might have a bearing on the etiology, test the gastric secretion and motor power, analyze the stool for occult blood after the patient has been on a meat-free diet for three days, follow with a "test-out" observation and finally X-ray study. A careful evaluation of all these findings will stabilize your conclusions to the point where error in diagnosis will be practically eliminated.

A successful result obtained by a medical regime necessitates an accurate diagnosis, a coöperative patient, a thorough knowledge of the method of treatment, and a realization by both physician and patient of the necessity for observing details.

As was pointed out above, numerous factors are involved in the etiology and pathogenesis of peptic ulcer. The digestive action of the gastric juice is one which is present in almost all cases. Various surgical methods are devised to that end; one to shorten the digestive period and allow regurgitation of the alkaline juices, and another to remove all or part of the acid-bearing area of the stomach to limit the action of the gastric juice. A method, therefore, which will annul the peptic activity of the gastric juice without interference with the physiologic process would seem to be ideal.

All early ulcers require a careful search into the history to determine a cause for the precipitation of the lesion. In order to do this intelligently one must appreciate the possibilities in-

involved, some of which were mentioned above in the discussion of the pathogenesis. The recognition and proper evaluation of such factors will go far toward eliminating many cases which would otherwise develop into chronic ulcers. The patient with a chronic ulcer will likewise be benefited by a careful investigation, since a cause of recurrence, which is so much a part of the clinical picture of a chronic lesion, may be established.

Having finally arrived at a satisfactory diagnosis, what disposition will we make of the patient? Will we advise surgical or medical treatment? No hard and fast rule can be made. In general, the early ulcer will be much more satisfactorily managed by proper dietetic measures than by surgical means while the opposite extreme, such as a chronic indurated lesion associated with obstruction and continued secretion will respond in a most spectacular way to surgery. The intermediate group should be cared for conservatively by medical regime except in those cases suggested in the following brief summary of surgical indications.

Surgery is definitely indicated (1) where there is reasonable evidence for suspecting a carcinoma; (2) perforation into the free peritoneal cavity; (3) chronic ulcers associated with high grade stenosis due to cicatricial narrowing; (4) in patients who have failed to secure lasting relief either from pain or recurrent hemorrhages, following a careful medical regime; (5) in chronic perforations with marked perigastric or periduodenal adhesions; (6) in the presence of associated pathology such as cholecystitis or recurrent appendicitis, not necessarily for purposes of gastric or duodenal surgery, but to remove possible foci of infection; and (7) in those patients whose social or environmental status will not permit of proper coöperation in order to make the medical regime a success.

The medical treatment of a peptic ulcer does not differ greatly whether the lesion is early or chronic, gastric or duodenal, except to meet indications of certain complications which may be present.

Experience teaches us that in order to obtain the best results the medical management should be carried out with just as much precision, plan and attention to detail as that followed by the surgeon in the performing of a gastro-enterostomy.

In the active treatment of peptic ulcer the removal of all possible foci of infections is of greatest consideration. One may have no evi-

dence to prove the connection of any one focus of infection, but since there is little doubt that these various sources have been associated in one case or another, there is ample justification for insisting upon complete removal of all possible incriminating sources. This is equally true in all cases whether operated on or not and of greatest importance in recurrences and in jejunal ulcers following operation.

All infected teeth and tonsils should be removed. Appropriate surgery of the gall-bladder and appendix should be instituted when the patient's condition will warrant. Search should be made for possible food idiosyncrasies which might influence the healing of the ulcer or might possibly precipitate a recurrence.

The patient is almost invariably advised to remain at bed rest for several weeks. The prompt relief obtained often by rest alone seems to justify this as a part of the routine. This practice is most important in those individuals with more severe symptoms, and associated pyloric obstruction and it furthermore aids in impressing the patient with the importance of observing details of dietary management.

Since we feel so strongly that the management of these patients is primarily medical and that the success of treatment depends so much upon the patient's coöperation, we insist whenever possible that he or she should have a two or three weeks rest period where a more accurate observation may be instituted which will permit of a more satisfactory evaluation of the patient's condition and for educational purposes, similar to the plan established for diabetics.

Whenever a rest period cannot be instituted, then an ambulatory plan is followed still adhering to the frequent feedings, powders and soft foods taken by those people in the hospital. So-called ambulatory treatment often works out very satisfactorily and may be justified when conditions will not permit of taking time off or where we can be sure of dealing with a relatively early lesion. One cannot be too careful, however, in impressing upon the patient the necessity of absolute coöperation, for an alteration of one portion of the regime will too often lead to further modification which may be fatal to a satisfactory termination of the treatment. I cannot stress this point too much, for I think the failure to obtain a cure may often be placed directly at the feet of the physician. Remember that the cessation of symptoms is not a cure of the pathologic process and the patient as well as the physician must realize that the continua-

tion of diet and other management according to a well-laid plan is the only means of securing a lasting effect.

I will not attempt to describe in detail the plan of diet used during the stay in bed but refer you to the article by the late Dr. Bertram W. Sippy in the *Journal of the American Medical Association* (Vol. 64, page 1625, 1915).

He held that the digestive action of the gastric juice was one of the most potent factors in the etiology of the chronic ulcer. He felt that by completely neutralizing the acid gastric juice and thereby annulling the peptic activity, he was able to remove "the greatest known hindrance to the healing of the peptic ulcer that is amenable to medical or surgical control."

Perhaps trauma is more of a factor, as pointed out by Mann, than seemed likely to Sippy, although the food incorporated in the diet is both soft and fluid, as well as highly albuminous, the latter quality aiding greatly in the neutralizing of acid. To be satisfactory, a diet must be nutritious, well-balanced, with sufficient vitamins, and contain such foods as will produce the least trauma and have the greatest neutralizing effect.

Several principles involved in the treatment justify repetition not in way of defense but in pointing out methods in the technic which are often deleted yet have a far reaching effect on the cure.

Frequent feedings are instituted from the very first and continued with some increase in the interval for a long time. In the early stage of the treatment three ounces of equal parts of milk and cream are given every hour from 7:00 A. M. to 7:00 P. M. After a few days thoroughly cooked cereal is added, then gradually egg, custard, toast, cream soups, vegetable pureés and the like are added, so that the patient is receiving these feedings every two hours and in such quantities as the individual can best tolerate. Fruit and vegetable juices and other vitamine containing foods are added in order to overcome any disturbance due to vitamine deficiency. When there is no pyloric obstruction usually three meals are given at the end of ten days to two weeks, but in presence of stagnation of food, the three meal a day plan is not instituted before the end of three to four weeks. Whenever possible, however, the evening meal is less in size than the breakfast and lunch. Frequent feedings of milk and cream are continued for many months because we feel that they have a decidedly beneficial effect on the healing by reason of the neu-

tralizing effect they have on the gastric juice. At the end of three to six months, depending upon the character of the lesion, the amount of milk is increased and the interval of taking lengthened. The diet otherwise during the six to eighteen months continues to be made up of soft or semi-solid food, chiefly of soft eggs, cereals, toast and stale bread, cream soups, soft and puréed vegetables, cooked fruits, the sweetened juice of orange and grapefruit and desserts as custards, junket, jello, ice-cream and cakes. Simple salads as lettuce with cooked fruits and cottage cheese are allowed.

The patients are instructed to avoid strong coffee, tea, alcohol, smoking, meats, meat extracts and meat gravies. Chicken, fish and lamb are allowed but only for purposes of breaking the monotony of the diet, since ample protein is taken in the form of milk and eggs to supply the patient's ordinary requirements.

Drug therapy has thus far remained very simple since alkali with few exceptions continues to be the medication of choice. If used intelligently it answers all the qualifications that we would demand of a drug having specific action. It relieves pain and spasm and influences secretion. In our experience it takes the place of tincture of belladonna, tincture of hyoscyamus, orthoform or various opium derivatives. In fact when adequate alkali is used and the symptoms of distress and pain are not relieved, then we are dealing with certain complications of the ulcer or perversions of function of the gastric mucosa that make surgery a distinct indication.

Alkalies are given in the form of sodium bicarbonate, grains 30, combined with calcium carbonate, grains 10, and sodium bicarbonate, grains 10, and calcined magnesia ponderosa, grains 10. One of these two powders, marked No. I and II, are given hourly from 7:00 A. M. to 7:00 P. M. and every half hour from 7:00 P. M. to 9:00 P. M. The magnesia and soda powder being laxative is substituted for the other just as often as is necessary in order to secure a stool each day. Seldom is it necessary to increase the amount of alkali to completely neutralize the acidity except in the presence of pyloric obstruction.

Caution is advised not to give more alkali than is necessary to completely neutralize the acidity. There are certain individuals who cannot tolerate the amount of alkali laid down in Sippy's original article, yet I have seen a number of patients with moderate high grade obstruction and with recurrent hemorrhages secure a permanent

cure with no more than half the usual powders. These same patients had been on soft foods and rest for months without relief, but began gaining very promptly after instituting alkali therapy. It is true that some patients will make no particular progress in spite of alkali, although fortunately they are in the minority, but when they do exist they must be considered definitely surgical patients. Alkalies should be given very cautiously to patients with cardiovascular disturbances, in small amounts or not at all to those patients with kidney disturbances or cirrhosis of the liver.

Alkalies should not be kept up with the intention of complete neutralization of the gastric juice for a period of a year in the average case. They should be continued hourly for three to six months, every two to three hours after that for twelve to eighteen months. In the event of pyloric obstruction, however, they will have to be continued for a year or more.

Aspiration.—There are two distinct reasons for aspirating the stomach while the patient is on management, to determine first if the acid is neutralized and second, if the stomach is emptied before the patient retires. I am particularly insistent that the stomach be emptied of food and secretion each night. The patient always feels better and seldom has distress after this is instituted. Occasionally when there is distress present at twelve to two o'clock in the morning a marked amount of highly acid gastric juice will be removed and if aspiration is continued for several nights, there will be a gradual diminution in the amount. A patient who has failed to respond before may show very prompt results after aspiration has been started. It is only logical to believe that this highly acid gastric juice can undo during the night all the good done the previous day.

Patients with obstruction of high grade in whom operation is not feasible, will often be made very comfortable for years and oftentimes permanently relieved by systematic aspiration before retiring.

A *follow-up* program has been stressed by Franklin White of Boston on several occasions and has been carried out by us for many years. There is no part of the program more important to the patient than that of continued supervision after leaving the hospital. One is able to watch the progress of healing, to counsel with the patient and to encourage him. A diet which stresses the importance of an acid-alkali balance will go far toward stabilizing a physiologi-

cal function which will play an important rôle in counteracting a recurrence of the lesion. How better can we hope to control this than by insisting upon a follow-up system for subsequent check.

Every patient is definitely instructed that with the slightest evidence of a recurrence of symptoms he must immediately limit his diet

to frequent feedings of milk, soft foods but limited amount, and return to frequent alkalies. Usually if done promptly it will not be necessary to remain long on this diet and by so doing it has been my usual experience that the symptoms subside at once, that the remissions are longer and the recurrences fewer.

THE CLINICAL SIGNIFICANCE OF CHRONIC DYSPEPSIA*

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In presenting this paper I wish to correlate certain well known signs, symptoms, and syndromes of chronic dyspepsia, emphasizing those which have a practical application in the diagnosis of chronic abdominal disease.

Too often we make laboratory diagnoses. Too often we treat disease symptomatically instead of finding and removing the cause. And too often we allow ourselves to be deceived into thinking we have effected a cure, when there has been merely a temporary cessation or relief of symptoms. This is especially true in the chronic dyspepsias.

Chronic abdominal lesions, particularly those in the upper abdomen, are manifested primarily by dyspeptic symptoms. For purposes of discussion these symptoms may be placed in two main groups: I. Organic Dyspepsia. II. Functional Dyspepsia. Functional dyspepsia cannot be adequately classified. Each case is an exhibition of the personal idiosyncrasies of the patient. The characteristic feature is the history. The primary gastrointestinal complaints are often only a part of the general picture, for the symptoms are usually widespread, involving many systems and regions of the body. Moreover, they are especially inconstant and irregular. Pain is common but variable and may be referred to any part of the abdomen. The distress usually occurs immediately after eating and may be temporarily relieved by soda but never by food. It is often exaggerated in comparison with the other symptoms and findings. Aërophagia, bloating, belching, and acid eructations occur. Some cases suffer a persistent nervous vomiting which occasionally results in

serious inanition. The amount of disability or prostration is at times a striking feature. The severity of the dyspepsia is often directly proportional to the amount of domestic, social, or financial troubles of the patient, and a careful inquiry into these matters is therefore a valuable aid in the diagnosis. The differentiation from the dyspepsia associated with migraine is made by the characteristic history of the latter, the symptoms of which are pathognomonic.

Organic dyspepsia may be divided into two types, namely: (1) Reflex Dyspepsia. (2) Ulcer Dyspepsia. Malignancy can hardly be included in this discussion. For although its onset may be comparatively slow and insidious, once established the course is rapidly progressive. The characteristic train of symptoms such as marked loss of weight, anemia, cachexia, weakness and rapid wasting need no further comment.

The most common causes of Reflex Dyspepsia in the order of their frequency are: (1) Chronic Constipation, especially if the patient has the cathartic or enema habit. (2) Chronic Cholecystitis, with or without stones. (3) Chronic Appendicitis. (4) Degenerating Hepatic Disease, (Cirrhoses). (5) Chronic Pancreatitis. (Berkman).

An essential feature of all reflex dyspepsia is the tendency toward constancy rather than intermittency. This is especially true of the digestive upsets which result from chronic cholecystitis. The symptoms are often quite characteristic, and sufficiently constant to form a syndrome of decided diagnostic value. Qualitative food distress is almost invariably present, the patient frequently complaining of inability to eat fats, greasy or fried foods, highly acid foods, raw fruits, pickles, cabbage and salads.

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The distress is entirely in the upper abdomen and the symptoms usually occur immediately after meals. The patient often complains of fullness or distention, with a feeling of pressure in the epigastrium accompanied by bloating or belching. There is a burning distress in the stomach with acid eructations which are relieved temporarily by soda. Unless attacks of gallstone colic occur, pain is the exception rather than the rule. As the food passes along and the upper digestive tract is emptied, the symptoms tend to improve and in the milder cases may disappear entirely until the next meal.

Dyspeptic symptoms referable to a chronic appendix unfortunately are not so constant or so characteristic as in the gall-bladder type of dyspepsia. An appendix that is habitually infected and subject to recurrent inflammation manifests its entity by symptoms which may be either local or reflex. In the reflex type the symptoms are referred to the upper abdomen, particularly the stomach, and occasionally to the large bowel, producing the so-called "irritable colon." In appendiceal dyspepsia vomiting is probably the most constant symptom (Heyd). Pain or distress is a frequent manifestation, commonly located in or about the umbilicus and perhaps radiating toward the right lower quadrant. This pain is definitely increased by the ingestion of food, but there is no periodic recurrence of the pain in relation to meals. Certain articles which may be eaten with comparative freedom at one time may produce greater pain the next. And symptoms present on one day may be absent during the following days or possibly for several weeks. Fortunately many cases of appendiceal dyspepsia give a history of previous attacks of fairly severe pain in the right lower quadrant. In the absence of pelvic or urinary pathology these can be reasonably interpreted as being due to the appendix, and unquestionably valuable clues in the diagnosis.

The dyspepsia produced by the various cirrhoses is chiefly the manifestation of vascular disturbances. The most extreme grade of portal cirrhosis may exist without any symptoms so long as compensatory or collateral circulation is maintained (McCrae). However, the marked increase of connective tissue (a feature common to all forms of cirrhosis) results in subsequent fibrosis with obstruction to the portal circulation. This in turn produces a chronic passive congestion with an overflow of blood in the stomach, intestines and spleen. Ac-

cordingly the following dyspeptic symptoms occur: pain, anorexia, nausea and vomiting, hematemesis. The pain varies in intensity. It is best described perhaps as a heavy ache, localized in the liver area, and accompanied by a marked tenderness of that organ. The patient's initial complaint may be nausea and vomiting, particularly in the morning. Hematemesis is not infrequently an early symptom. The hemorrhage is often profuse and subject to recurrences but seldom fatal. Hematemesis in the absence of an "ulcer history" or with no demonstrable lesion in the stomach and duodenum, should always make us suspect the liver or spleen as the etiologic factor.

Pancreatic dyspepsia is manifested by symptoms which are not distinctive but fairly suggestive. The clinical picture is hard to differentiate from biliary disease which not infrequently is an associated condition. The more common symptoms are: pain, anorexia, nausea, vomiting, and diarrhea. The pain varies from a dull ache to the acute knife type characteristic of gallstone colic. It differs somewhat from the latter in that it is referred from the midepigastrium to the left side of the back rather than to the right. (C. H. Mayo). Tenderness is sometimes present over the pancreas and may persist in the interval between attacks of pain. Anorexia is common. Nausea and vomiting usually occur during acute exacerbation of pain. The diarrhea is quite characteristic. The stools are bulky, fetid, and contain an excess of fat. Unquestionably the diagnosis is often very difficult. However, in a chronic dyspepsia presenting the above mentioned symptoms the pancreas may well be the offender.

Uncomplicated peptic ulcer produces the most clear-cut syndrome of all the chronic dyspepsias. Clinically, the four most important features in the diagnosis are (1) Chronicity (2) Intermittency (3) Meal Relation and (4) Food Ease. These symptoms were present in 90 to 97 per cent for a series of 100 cases where the diagnosis was verified at operation (Berkman). Of this group 68 per cent gave a history of pain at night between twelve and three A. M. relieved by food or alkalies. There was a seasonal incidence of distress in 28 per cent, and vomiting not associated with gastric retention in 15 per cent. The disease is chronic, and if uncomplicated is definitely nonprostrating. It is also decidedly intermittent, several months often elapsing between attacks. The latter occur more often in the spring and fall. The characteristic

daily sequence of events during an attack, namely, "pain-food-ease," are so uniformly present that they are almost essential for the diagnosis.

The clinical picture of gastric ulcer differs from that of duodenal ulcer chiefly in theory and textbooks. According to Deaver the pain in gastric ulcer which comes on after meals gradually subsides before the next meal is taken, while that of duodenal ulcer persists until relieved by food. Moynihan expresses the difference by a quadruple rhythm in gastric ulcer; "food, comfort, pain, comfort"; and a triple rhythm in duodenal ulcer; "food, comfort, pain." For all practical purposes this means that the typical "pain-food-ease" syndrome is somewhat blurred in gastric ulcer. As a matter of fact this same blurring occurs in duodenal ulcer, and especially in those cases with pyloric obstruction. Vomiting, a symptom occurring in only fifteen per cent of cases of uncomplicated ulcer, now becomes a prominent feature. The distress is more or less constant and there is little or no relief by food.

The diagnosis of peptic ulcer is aided greatly by roentgenologic examinations. However, I

want to emphasize the fact that the roentgenologist cannot tell us whether the ulcer is active or quiescent, or whether it is healed. This must be decided by the clinician. Again then we are reminded of the importance of clinical diagnosis.

Finally, I would emphasize the importance in differentiating between functional and organic dyspepsia. Many times an exact diagnosis cannot be made. For example, if the patient has an organic dyspepsia it may be due to a chronic gall-bladder or a duodenal ulcer or a chronic appendix. Perhaps he has two of these, possibly all three. It does not really matter because they can all be attended to through a paramedian incision. However, it is obviously essential that we differentiate between organic lesions requiring surgery and functional troubles which need proper medical treatment (Alvarez). It is chiefly through careful clinical study that this differentiation is made possible. We should therefore always bear in mind that not only the diagnosis of chronic dyspepsia but the treatment as well depends primarily upon the correct interpretation of the clinical symptoms.

CLEARING THE AIR

BY SHIRLEY W. WYNNE, M.D., DR. P.H.
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NEW YORK CITY

Although less than ninety days have elapsed since it was started, the movement has taken on much momentum to eliminate from the radio the medical quack, the peddler of nostrums, and mountebanks extolling and selling so-called "electric" devices, diets, exercising and reducing systems. Launched at a conference in my office in the Department of Health, 505 Pearl Street, New York City, the first week of January, the plan, almost from the very beginning, attracted widespread attention, so much so that before the end of the first month it received the official endorsement of many State Departments of Health, State and City Chambers of Commerce and Boards of Trade, civic and welfare bodies, the newspapers and magazines, as well as the medical press.

Action to clear the air of what medical and health leaders are agreed is a menace to public well-being and health followed an investigation conducted in New York City last December. Then it was found that the medical quack and

purveyor of fake medical devices and systems, long barred from the advertising columns of the reputable press, had found a fertile field to ply his nefarious trade over the radio, and that many radio broadcasting stations, particularly the smaller ones, had many of these fakers among their clients. Almost every day and night one or more of these quacks were found to be "quacking" medical advice over the radio, offering "medical" devices and yet having but one goal in view—the dollar of the gullible.

Entry of the medical quack into the radio field was due largely to the quack's unsatisfactory economic situation. He was faced with two disturbing facts: the advent of the radio had virtually driven the medicine show out of business, so that was blow No. 1 for the quack; the decent newspapers barred him from their advertising columns, so blow No. 2 was landed. Quick to size up the situation, the quack, in a new garb, staged his medicine show in the broadcasting studio and played to thousands of

persons instead of to hundreds as he did from his tent. Keen competition in the radio field, particularly among the smaller broadcasting stations, caused solicitors to snap up contracts without any investigation, and the latter phase suited the medical quack who jumped at the opportunity to reap a fresh harvest.

In response to my invitation representatives of the Academy of Medicine of New York, the five County Medical Societies of New York City, the State Department of Health, the State Board of Medical Examiners, the National Association of Radio Broadcasters, the leading national and local advertising associations as well as many other leaders attended the conference, as did also representatives of the 46 smaller radio broadcasting stations in New York City. The consensus of the conference was that cleaner radio programs, particularly ones that would contain nothing detrimental to the health and well-being of the listeners in, should be planned, and it was generally agreed that the medical quack and medical device faker should be barred from the air.

At present the Federal Radio Commission, the United States Public Health Service, and the Federal Trade Commission are considering our suggestion that they combine in making a nation wide survey of the use of the radio by medical quacks and charlatans. We believe they will lend this coöperation, and when the survey is completed the findings will be listed so that an index, containing the name of the faker, his history and the name of his nostrum and its history, will be compiled. This compilation will be in the hands of a committee made up of a representative of the Public Health Service, of the New York State Department of Health and of the New York City Department of Health. Copies of these indices will be sent to radio broadcasting stations, and the list augmented from time to time as new medical offerings are found to be fakes, after careful investigation by the Committee.

The elimination of the medical quack and charlatan from the air is necessary to the public health and welfare, for not only are these human vultures preying on the ill, but are convincing the well that unless they use the goods, systems, diets or exercises they are offering, they too will become ill. Despite the efforts of medical and public health experts, despite exposures in the newspapers, despite advances in education, there are hundreds of thousands of persons

in the United States who can be swayed by the medical quack, who swallow his advice, as well as his worthless medicine, who pay exorbitant prices for so-called electric devices that do more harm than good, and who, after being virtually ruined by the quack, are loudest in their denunciation of the reputable medical practitioner when he is unable to undo the wrongs caused by the charlatan.

Because of this condition and competition in the smaller radio stations the campaign against the medical quack must, of necessity, be a campaign of education and one that must have the undivided support of the medical, public health, civic and welfare leaders in every town in the country. It must have the whole support of the lay and professional press. For, despite the fact that quack is a menace to public health, it will require concerted action to drive him from the air. This, however, can be accomplished, and in a remarkably short time, if in every community the medical, public health, civic and welfare leaders will coöperate with us in our campaign. All that is necessary is to convince the operators of local radio broadcasting stations that they owe it to the public, as well as to themselves, to furnish clean and healthy programs, and that if they permit the broadcasting of anything that menaces the health and well-being of their listeners in they are aiding and abetting illegal medicine. The average radio broadcasting station management depends upon attractive programs for its livelihood, and when it is pointed out that if quackery and charlatanism are permitted, the income of the station will be threatened, I feel confident the management will agree to join in the movement to protect the listener in from the grave danger of sickness and perhaps death that inevitably follows in the wake of quackery.

In presenting this matter to the readers of the JOURNAL-LANCET I do so with the assurance that they will agree with me that the movement against the medical quack and the charlatan is more than a medical or public health action. I feel they will agree that the protection of the public is of vital import to public leaders, whose aid should be enlisted in this worthy campaign. Anything that menaces the public, whether it be in the line of health or morals, calls for speedy abolition, and every medical practitioner knows the danger to health that lies in the lies disseminated by the medical quack.

CLINICAL PATHOLOGICAL CONFERENCE

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The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

C.

The case is that of a boy, 16 years old, admitted to the hospital February 27, and died March 6 (7 days). He complained of sore throat for a year, cold and sore throat one week, pain in epigastrium two days, localized pain in right lower quadrant two days, and anorexia two days. He had been out of school but not in bed for one week with a cold. One day before admission (February 26) he woke with a stomach ache, which he thought was due to eating black walnuts the evening before. He remained in bed and pain seemed to diminish during the day. Was restless and feverish during the night. At 4:30 A. M., the 27th, he called his mother because of sharp, localized pain in the right lower quadrant, and told her that he knew he had appendicitis. A physician was called who advised immediate hospitalization.

Patient arrived at the hospital about 6:00 P. M. and was operated upon at 8:00 P. M. No history of any previous abdominal disease. Had had measles, whooping cough, chicken pox. Slight injury in childhood. Had been quite well all his life but not as rugged as other children. No tuberculosis, diabetes, or epilepsy in the family history. Good record in school. Played basketball one year; no injury. Led normal boy's life. Frontal headaches, especially with colds. Frequent nosebleed, usually associated with colds. Once had to call a physician to stop the bleeding. Parents state that he never had a really healthy color.

Examination showed the head and neck negative. Chest negative except for an occasional râle on the right side. Marked muscular rigidity, tenderness in the right lower quadrant. Slight muscle rigidity on the left side. Rebound tenderness present. Superficial tenderness present. A mass seemed to be palpable in the right lower quadrant. Rectal showed slight tenderness. Diagnostic impression: acute suppurative appendicitis.

Urine negative. Hemoglobin 83 per cent; white blood cells 11,900; polymorphonuclears 78 per cent, lymphocytes 15 per cent, mononuclears 7 per cent; group 4. Nose and throat cultures negative. Culture from peritoneum showed gram negative cocci and a few bacilli. Smear showed gram positive diplococci, a few bacilli; few gram negative bacilli, few streptococci. X-ray of chest negative.

Operation February 27, 8:00 P. M. Spinal anesthesia. Long appendix; tip and distal third gangrenous and necrotic, having perforated; bound down retroceally by short mesentery. Adjacent cecum was indurated and injected. McBurney incision. Free pus encountered when peritoneum was opened. The peritoneal surfaces did not seem to be much involved although the abscess was not walled off. The appendix was dissected free and amputated. Three drains inserted, one to base of cecum, one to lateral gutter, and one to pelvis. The abdomen was closed in layers.

Returned from operating room in fair condition. Hypodermoclysis (2000 c.c.) started. Blood pressure 132/86. February 28, very pale, pulse weak, vomiting. Given 1,000 c.c. glucose intravenously. Had short chill after medication. Time of administration 45 minutes to 1 hour. (?) Pulse rapid; good quality. Coarse breathing throughout both sides, especially at bases; mucous râles over bronchi. Had 3,500 c.c. of fluid during the day; nauseated but retained all fluids by mouth. March 1, fair day, perhaps a slight improvement over the previous day. Did not take fluids by mouth very well. 2,500 c.c. subcutaneously and 1,000 c.c. of 105 glucose intravenously. Wound dressed and two stitches below drains removed to facilitate drainage. Abdomen somewhat rigid and rebound tenderness present throughout. March 2, condition fair; temperature up to 100°. Fluid intake March 1, 3,800 c.c.; output about 800 c.c. Thin serous drainage from wound, moderate in amount. March 5, had been getting along fairly well. Color good. Blood pressure 128/90. Drainage from wound still serous and very foul smelling but not as copious as desired. Had an S. S. enema follow by good results, but abdomen became very painful. Groaned constantly. Blood pressure fell to 84/50. Given 2,200 c.c. of fluid. Four A. M., again went into a shocklike state; extremely cold and clammy; restless, somewhat irrational. Glucose 1,000 c.c. at 5:00 A. M., followed by 2,000 c.c. of subcutaneous fluid. Given morphin sulphate for severe abdominal pain. Went into collapse at 6:30 P. M., pulseless, cold, breathing shallow. Seemed to improve after 1,000 c.c. of glucose and adrenalin. March 6, following administration of glucose, patient quieted down, but in a few hours became violent and irrational. Com-

plained of abdominal pain. Relapsed again into shocklike state. Tried to get out of bed. Cheyne-Stokes respiration. Exitus 11:55.

Postmortem report. Acute gangrenous appendicitis; acute generalised fibrinopurulent peritonitis; ileus; acute confluent bronchopneumonia of hypostatic type; acute fibrinopurulent pleuritis.

Comment. The case is characterized by rapid onset and stormy postoperative course. The appendicitis was apparently preceded by an upper respiratory infection.

D.

White man, 80 years old, admitted October 23 and died November 18 (26 days). He complained of dysuria; inability to start stream 2 months; nocturia 2 months. He had first urinary complaint two months ago when he noticed he could not start the stream. This had grown progressively worse until he could pass only a very small amount of urine at a time. He was catheterized twice by a physician before admission, who recovered a great deal of urine. Patient was in great distress because of bladder and urethral irritation. Complained of frequency, every fifteen to thirty minutes, with small difficult passages of urine. Was catheterized and a retention of 290 c.c. found.

Examination showed beginning bilateral cataract. Tinnitus and decreased hearing. Chest and lungs negative. Heart: systolic murmur heard best at aortic area, transmitted down to third left interspace. Beading of radial and brachial arteries. Blood pressure 180/112. Abdomen showed moderately large incisional hernia following cholecystectomy 12 years ago. Prostate showed extreme enlargement by rectal examination, especially on the right side; gland soft but thick.

Urine: Albumin a trace; many white blood cells; P. S. P. first hour 20 per cent, second hour 25 per cent, total 45 per cent. Blood: hemoglobin 93 per cent; red cells 4,750,000; white cells 7,000; polymorphonuclears 70 per cent; lymphocytes 25 per cent; monocytes 5 per cent. Blood urea nitrogen 19.6. Wassermann negative.

Patient was catheterized twice daily; residual urine of 270 c.c. persisted. Permanent catheter installed. Meatus very red and swollen. Prostate surrounded by large boggy area of edematous tissue.

Operation, 19 days preparation, November 12. Bladder exposed and opened. With one finger prostate was shelled out in 2 pieces. One sponge left in defect as a pack.

Postoperative convalescence excellent for four days. Then condition not so good. Patient seemed very drowsy. Hyperventilated. Seemed to have some dyspnea. Few crackles in right chest. November 16, small patch of pneumonia, right lower. High temperature. Had bronchopneumonia as well as wound infection. Complained of dyspnea and tachycardia. Given steam inhalation. Digitalis, forced fluids, carbohydrates, high caloric diet. Wound irrigated and dichloramin packs on bladder; prolonged stimulation and oxygen tent. Patient expired.

Urine varied in specific gravity from 1,010 to 1,025, most of readings about 1,010.

Therapy: Urotropin, sodium acid phosphate, bladder irrigation, ergot, apomorphine, morphine sulphate, proctoclysis, hypodermoclysis, digitalis, elixir terpin hydrate, caffeine sodium benzoate, morphine sulphate.

Preoperative temperature 97° to 99° with an occasional rise to 100°. Postoperative temperature from 97° to 104°. Pulse preoperatively, 70 to 80; postoperative, 70 to 120. Respirations 18 to 40.

Postmortem report. Benign hypertrophy of prostate; chronic hemorrhagic cystitis; recent operation with wound infection; acute confluent bronchopneumonia; emaciation.

Comment. The patient was a very elderly man in a poor nutritive condition and was therefore unfavorable for operation. He was given 19 days preparation for operation, which seems sufficient. There was no uremia or upper urinary tract involvement. Death was apparently due to postoperative pneumonia.

Autopsy—29—1534.

Woman, 27, had been suffering from chronic arthritis for a number of years. She had been treated at various times and now returned for manipulation of stiffened knee joints. Her temperature at the time was normal.

Both knees were manipulated under gas anesthesia on the morning of October 26. That afternoon she suddenly went into deep stupor from which she could not be roused. Pulse became very weak and rose to 160. Blood pressure fell to 0. The temperature rapidly rose to 104° and subsequently reached the high point of 107°. The skin was cold and clammy. There was no cyanosis. She showed some response to stimulants and external applications of heat.

The following day there was slight improvement. The blood pressure could now be read and was 80/50. The stupor persisted. Both pupils were moderately dilated but equal. Respirations were approximately 30. The chest was negative. At 5:00 p. m. she became worse; blood pressure was 75/50 and there was some cyanosis. She was given transfusion. Respirations continued to be between 30 and 40; pulse 106; temperature 107°. Just before death the temperature fell to 105°. She died October 28, 3:35 p. m.

Postmortem report: All organs normal except the brain, which shows multiple petechial hemorrhages, confined for the most part to the gray matter of the cerebral cortex. They are found throughout the right occipital lobe especially, and in the parietal lobe to some extent. One large hemorrhagic area in the occipital lobe measures about 1 cm. in diameter and has some resemblance to a hemorrhagic infarct.

Microscopic sections through the hemorrhagic areas show large numbers of fat droplets in the blood capillaries.

Diagnosis. Fat embolism of the brain.

Comment. Breaking up an old ankylosed joint occasionally results in fat embolism of the brain. Apparently in breaking the bony ankylosis the bone marrow is opened up. This breaks the fat cells and allows them to get into the veins of the marrow. This occurs when there is no fracture of the bone itself. (There were no fractures in this case.)

Autopsy—29—1489.

Man, 62, admitted September 26 complaining of insomnia, lassitude, vomiting, and diarrhea. The history dated back six weeks when he began to have insomnia. This was accompanied by lassitude and a generalized tired feeling. He began to have attacks of vomiting which came on, for the most part, during the night and early in the morning. After vomiting, he usually noticed relief of a vague epigastric distress. At the same time he began to have a diarrhea with about six watery stools a day. These did not contain blood or mucus. For several months the patient had noticed a nonproductive chronic cough. There was no history of night sweats or blood in the sputum. The past history was negative except for pneumonia at the age of 30 and rheumatism at the age of 18. There was no history of recent upper respiratory tract infections.

On examination the patient was found to be emaciated and pale. He was entirely negative except for a few moist râles in both bases, posteriorly. On the right side just below the axilla there was an area of coarse crackling râles, bronchial breathing, and increase of tactile and vocal fremitus. The heart was negative. The abdomen and extremities were negative. The blood pressure on admission was 80/40. The temperature was 101° and the pulse rate was 90. The temperature came down to nor-

mal on the third day, as did the pulse, and practically remained there until death. During the course in the hospital the patient had persistent low blood pressure which ranged for the most part around 80/40 to 85/50. The lung findings on the right side remained about the same.

The urine showed a trace of albumin on one occasion. The stools were negative for occult blood. The spinal fluid was negative. The sputum was negative for *B. tuberculosis*. The blood Wassermann was negative, as was the blood chemistry. The colloidal gold was negative. A blood count was well within normal limits. An X-ray of the chest reported density in the right lower lobe.

The patient ran a rather rapid downhill course and died on October 12.

Postmortem report: No disease of the left lung or the left pleura. The right pleural cavity is obliterated almost completely by fibrous and fibrinous adhesions. The right lung weighs 1450 grams. The entire upper lobe is consolidated and on section pneumonia in the stage of gray hepatization is found. The lower lobe is not involved. Between the upper and lower lobes is a cavity about 8 cm. in diameter filled with creamy purulent material. Cloudy swelling of the liver and kidneys.

Diagnosis: Lobar pneumonia of the right upper lobe; interlobar empyema of the right side.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of March 12, 1930

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, March 12, 1930. Dinner was served at 7:00 P. M. and the meeting was called to order at 8:00 P. M. by the President, Dr. Emil S. Geist. There were 50 members and one guest present.

Minutes of the February meeting were read and approved.

The Secretary read the report of the Executive Committee meeting held earlier in the evening. This was approved.

The scientific program of the evening consisted of a paper and two theses, as follows:

Dr. William F. Braasch (Rochester) read a paper on "Congenital Failure of Renal Rotation and Associated Anomalies" and showed numerous lantern slides of these anomalies.

DISCUSSION

DR. CAMPBELL BEGG (Wellington, N. Z.) (by invitation): Mr. President and Members of the Minnesota Academy of Medicine: I have to thank you very much for your welcome this evening. I feel it a great privilege that, thanks to the courtesy of Dr. Braasch, I am able to be present at one of your

meetings. St. Paul and Minneapolis are well known to me through the preëminent men they have produced in various spheres of medicine. I also appreciate very much Dr. Braasch's masterly presentation of this subject. When pyelography is mentioned throughout the world, his name is certainly the one uppermost in all minds as the one who established the procedure on a practical basis.

The discussion of such a paper on short notice is not easy. The subject is most important from the point of view of the general surgeon as well as the urologist. Some of the bizarre shadows shown tonight are reminiscent of a zoölogical garden. The figures of many familiar animals can be seen in these shadows. I always picture the pyelogram of the nonrotated pelvis by comparing it with a kangaroo. It can appropriately be called the "kangaroo" pelvis, the tail being the ureter. To work out theories of the formation of the anomalies of the urinary tract on the accepted developmental facts is rather an interesting pursuit, but when we find the axioms wrong the whole ingenious theory is apt to crumble. I remember in a paper working out the method by which aberrant ureters are produced, by the assumption of the usual idea that the ureter comes as a bud of the Wolffian duct which forms the trigone and posterior urethra. Unfortunately and much to my annoyance, I read an article last year by a German writer contending that the Wolffian duct did not do this at all!

It is very difficult to analyze the factors that make the kidneys in their ascent adopt one position or the other. We might assume the slope of the psoas muscles as one of the factors of rotation, but when Dr. Braasch has shown that many of these nonrotated organs still retain fetal lobulation, it almost makes one think that a definite urge is present in the kidney itself. Immaturity in constitution leads to abnormality in position.

I see, however, no reason why kidneys retained in the pelvis should not come to lie on their side. The room in the pelvis is needed for other purposes and the kidneys are pushed by pressure into the position where they will take up least room, that is, on their sides, sometimes on one, sometimes on the other.

There is a type of fully developed kidney which appears normal in the pyelogram and in which the pelvis lies in front of the vessels. This, incidentally, is one of the criteria by which to decide whether the displacement is by acquired torsion or is congenital. In torsion the relation of the vessels to the pelvis remains normal. Many years ago Dr. Charles Mayo advocated exposing the kidney pelvis from behind to remove a stone from it, and then to cut boldly down on the stone through the fat and other tissues without dissecting out the pelvic wall. The idea was to prevent fistula. Once when about to carry out this technic, I looked more closely at the structures and found that the pelvis was in front of the vessels, so that a bold incision from behind would have traversed the renal vessels before reaching the stone.

Abnormal renal arteries are the rule rather than the exception. On one occasion I encountered a pyelectasis caused, or at least accentuated, by an aberrant renal artery which was almost the sole supply of the kidney. It entered the lower pole. As I could not cut the artery without destroying the kidney, I cut the dilated pelvis right across the ureter and the lower section of the pelvis, below the artery, and brought it up on the other side. The result seemed to be satisfactory.

I should like again to say how great a pleasure it has been to be here tonight, to have heard such an excellent paper, and to have had the opportunity of meeting you all.

DR. F. E. B. FOLEY (St. Paul): I have been delighted with Dr. Braasch's preparation, and greatly instructed but simply astounded by the amount of his material shown in the lantern slides. Such an array of anomalies is remarkable.

The importance of anomalies of the upper urinary tract as a subject of clinical urology is not generally appreciated. On a summary analysis of our own material it is found that, if cleavage anomalies (duplications) are included, these conditions are even more frequent than renal tuberculosis.

A good grounding in the pathology of urinary tract disease, of course, is essential in clinical urology. Knowledge of upper urinary tract embryology is likewise essential in clinical problems in which renal anomaly is concerned. That such anomalies are so frequent emphasizes the importance of at least a working knowledge of this embryology. If one is to have much to do with diagnostic and surgical urology, this is of great importance, and

only by understanding the morphogenesis of these anomalies may findings indicating their presence be properly interpreted.

Dr. Braasch, in spite of my efforts, still refers to anomalies of form, position and number. This old classification is arbitrary and does not take into account facts of development. Some time ago I submitted a new classification based on the morphogenesis of these malformations. According to this, anomalies of the upper urinary tract are divided into three groups according to the primitive organ from which the malformed structure is derived:

- (1) The Renal Blastema (kidney proper).
- (2) The Wolffian Duct (ureter, pelvis, calices, excreting ducts).
- (3) The Vascular Channels (renal blood vessels).

In the first group belong the anomalies of form such as lobulated kidney, polycystic kidney and the fusion malformations such as horseshoe kidney, unilateral fused kidney and malpositions such as ectopia and malrotation of the sort described by Dr. Braasch.

In the second group belong the cleavage anomalies, usually referred to as duplications, complete or partial. Abnormal position of the ureteral opening within the bladder, urethra, genital tract or rectum also falls into this second group. It includes also those structural narrowings of the excretory channels occurring as congenital strictures of the ureter, uretero-pelvic junction or calices. The third group is comprised of anomalies of the renal vascularization.

Dr. Braasch enthusiastically approved of this classification when it was first presented.

There is one point in regard to the interpretation of pyelograms showing under rotation of the kidney which Dr. Braasch did not mention, but one which is of great aid in recognizing the exact condition present. Whether or not attention has been called to it by others, I do not know. As indicated by Dr. Braasch, there may be malrotation either alone or in conjunction with fusion. It is of great importance to differentiate between the two. Even with a pyelogram on only one side, the differentiation may usually be made by the presence or absence of what I have called the normal "axial deflection of the kidney." When the kidney is first formed down near the lower end of the Wolffian duct and during the early part of its ascent, its axis is oblique from above toward the midline below. During the latter part of ascent this axis is deflected and becomes oblique, from below toward the midline, above. With simple under rotation this normal axial deflection is present. Fusion of the two kidneys prevent this occurrence and axial deflection is absent. Thus the presence or absence of normal axial deflection is a criterion for differentiating between simple under rotation and fusion anomaly.

DR. R. E. SCAMMON (Minneapolis): I don't know that I can add much to the discussion. Problems of this kind interest the embryologist very much and we all appreciate their being brought to our attention. When one considers the number of things that take place in the development of the kidney, it is not surprising that we find these anomalies. Most anomalies consist either of structural defects, occasionally growth anomalies, or of per-

versions of position. The kidney is one of the organs which may have all of these developmental defects. The kidney is also peculiar in the respect that these anomalies occur much later than is usual, that is, between about the fourth week and, perhaps, the sixth week after conception. These anomalies of the kidney are, most of them, a good deal later—a matter of later embryonic period or extending into fetal life.

So far as I know, we find deflections of rotations of major importance in the body in the following places: in the heart, in the gastro-intestinal tract, in the uterovaginal canal, and this one just pointed out in the kidney. These are the main places where we find a deflection by axis rotation. It seems to me we know very little about these deflections in the axes of organs or systems. The mechanism of heart rotation seems to fit fairly well with certain known principles of hydrostatics. The anomalies that we find in the uterovaginal system seems to occur very much later and are probably tied up with the rapid growth of the pelvic colon and certain other pelvic viscera. But we know much less of these anomalies of axial positions of the gastro-intestinal tract and the kidneys and ureters. Some work done by Cary indicates that rotation of the gastro-intestinal tract is probably an interstitial matter; that it is not due to mechanical pressure but to the fact that the cells of the tract grow in very definite zones. Why this is so, we do not know. It seems quite probable that this unequal growth is responsible for the rotation of the digestive tract. I am inclined to think that if we had an analysis of this kind for the kidney and ureter we might find the same thing to be true.

The secondary changes that we get in fetal life do not seem to be tied up with pressure. I am inclined to think that these very interesting anomalies will be found to be tied up with the rates of growth in certain zones; that some parts of the tract have marked powers of growth and some practically stand still. I would suggest that this is probably where we are going to find the explanation for these interesting anomalies; that it is in some growth phenomenon rather than in some mechanical phenomenon that we will find the true cause of these modifications in development.

DR. ARNOLD SCHWYZER (St. Paul): It just occurred to me (while listening to Dr. Foley's remarks) whether it could not be that this inward rotation of the upper pole, while the kidney gradually ascends, is due to the pivoting around the origin of the renal artery. The renal artery with its different branches holds the kidney while it ascends, so that when the kidney comes up the artery with its branches would rotate the pole. Perhaps the blood waves through the branches have a mechanical action to steady the distance of the poles from the main artery. I wonder whether there would be anything to that view.

DR. WILLIAM F. BRAASCH: I am certainly very grateful for the generous discussion of my paper. In answer to the last suggestion made by Dr. Schwyzer, one man's theory is probably as good as another's and that appeals to me as a very plausible one. In reply to Dr. Foley, I will say that I still think his classification is a good one and I tried

to use it in this paper, but found this was so broad that I could not, and had to go back to the old form. I hope this paper may have aroused some interest in this rather unusual field.

Dr. Charles N. Spratt (Minneapolis), read his thesis entitled "A Review of 100 Cases of Intraocular Foreign Bodies." Lantern slides and various instruments were shown.

DR. SPRATT: At this time it is proper and right that I should acknowledge my appreciation of election to this ancient and honorable body. In February I completed 25 years in the practice of medicine in Minneapolis and this comes as a sort of consummation of that event. In that 25 years I have seen 22,400 patients, two thirds of them eye patients. Among the latter were 98 individuals who had intraocular foreign bodies; three had foreign bodies in both eyes, making 101 cases of intraocular foreign bodies.

DISCUSSION

DR. JOHN F. FULTON (St. Paul): I rise more for the purpose of congratulating the Academy on having Dr. Spratt as one of its members and to bid him a joyful welcome rather than to take part in the discussion of his paper. The contribution which he has given us is a very valuable one, as much as any that an ophthalmologist has ever contributed to the Academy. I shall not enter into the history of methods of treatment of intraocular foreign bodies but refer you to a very excellent and reliable paper by Walter V. Moore, of Brooklyn, published in the 1924 volume of the American Journal of Ophthalmology, in which he gives credit to Dr. Nikolous Meyer as being the first to extract steel from the eye with a magnet. He quotes from the original paper by the author in which he says that he succeeded in removing a needle shaped piece of steel after having failed to remove it by means of the usual instruments, saying that he combated the subsequent inflammation by the use of leeches and cold packs. The two great leaders who developed and popularized the use of the magnet for removing foreign bodies from the eye were Julius Hirschberg, of Berlin, and Haab, of Zurich. Hirschberg became dissatisfied with the fixed magnet as being clumsy and inconvenient so he invented the electromagnet, removing foreign bodies by opening the vitreous chamber when the bodies were situated in that part of the eye. We are using about the same magnet today with the addition of greater power as demonstrated by the Sweet magnet. Dr. Haab, not being satisfied with the magnets in use, invented his giant magnet which he demonstrated at the Ophthalmological Congress in Heidelberg, in 1902. His idea was to add power to the instrument, believing that the greater the power the better the chances for success. He strongly recommended always to remove the foreign body through the route that it entered, opposing posterior sclerotomy.

A few years ago it occurred to Dr. Jackson that the magnet could only remove foreign bodies when it was able to overcome the grip of the ocular tis-

sues, and he maintained that it was just as important to loosen this grip as to increase the power of the instrument; so he suggested the use of the electromagnet scissors for this purpose, and succeeded in obtaining excellent results in this way when the magnet itself failed.

Only a few reports such as Dr. Spratt has given us tonight have been published. Haab reported 165 cases; failed in 25 of this number, and succeeded in removing the foreign body from 141. He enucleated 39. Cataract developed in 71, extraction of which produced excellent results in 51. Fisher, of Chicago, reported 150 cases, in 4 of which steel was found in the eyeball after enucleation. He obtained good results in 96 of these cases. The excellent results obtained by the reports here briefly analyzed, together with the very excellent analysis made by Dr. Spratt this evening, indicate the most gratifying results obtainable by the magnet. This is all the more wonderful when I remember that before its invention the very best oculists claimed that a foreign body in the vitreous chamber demanded enucleation. Criedland recently reported 76 cases, of which 43 were saved and 33 enucleated. His results demonstrated that the more anterior the foreign body was located the better the results. Twelve of his cases developed cataracts, 10 of which were successfully removed with complete restoration of sight. He always waited until the opacification was complete before extraction. Clinical experience demonstrates that the lens is more tolerant to foreign bodies than any other part of the eye. I refer you to a paper by Dr. Nikolaus Blatt, of Transylvania, published in the February number of the American Journal of Ophthalmology, in which he carefully points out the importance of conservatism in treating foreign bodies located in the lens.

DR. FRANK BURCH (St. Paul): We have much enjoyed this presentation by the essayist. One point learned from experience is concerning the presence of a foreign body in so-called idiopathic iritis. In six instances which I can recall, an apparently idiopathic iritis was found to have been caused by an intraocular foreign body. Only by a careful history of what transpired preceding the iritis can the possibility of a retained foreign body be disclosed. Two of my cases were in children, and in each instance what might have been a serious affair, as regards the future of the eyes involved, was prevented by the discovery of a foreign body within the eye, in one instance with the aid of the X-rays. In one case of a man who had developed an extremely persistent iritis with hypopyon, the condition was treated for three weeks with careful study for focal and systemic infection, until a more careful inquiry revealed the fact that three weeks preceding the onset of inflammation he had been hammering a plowshare and had felt something strike his eye with only temporary irritation. He had not associated the late inflammation with the previous injury.

In two other instances the patients could not even remember having received any injury although in one case the ophthalmoscope, and in the other the X-ray, revealed the presence of a foreign body in the choroid. The history of every patient with

iritis should be carefully taken to cover such contingency.

The tolerance of the eye for metallic as well as nonmetallic foreign bodies is at times very surprising. In one instance a piece of glass penetrated the eye following a laboratory explosion and was retained about three years until it was successfully removed with preservation of vision. Twice during the past few years encysted cilia have been removed after entering the eye through incised wounds of the cornea. A few weeks ago my associate removed a piece of steel from the lens of an eye which had remained there for about a year and had developed cataract, but at no time was there any severe reaction in the eye. Copper is peculiarly prone to cause disturbance. I have in the hospital at this time a patient with copper retained within the eye in whom I have successfully removed a cataract without any inflammation reaction. I believe he will eventually develop iridocyclitis as copper produces chemical changes which seem to be extremely irritating. Copper will produce a leucocytic pus within the eye without actual infection. In eight of nine shot cases which I have seen there has never been a case of sympathetic ophthalmia. In fact, I have never personally seen but one case of sympathetic ophthalmia following retained foreign body.

Dr. Spratt mentioned a subject which I would like to discuss further, namely, the fallibility of the X-ray localization. Once in my experience the X-ray examination did not reveal a foreign body; in another the triangulation showed the foreign body to be outside the globe. In both instances siderosis subsequently developed and in one of the patients enucleation was necessary. As Dr. Spratt mentioned, repeated X-ray examinations should be made, when necessary, if the history indicates the possibility of a foreign body. Also I know of cases where foreign bodies have been reported which could not be removed with a magnet. The eyes were removed and the foreign body was found embedded in the sclera in a harmless position. The difference of one-half mm. in triangulation measurements is sometimes a very important matter.

A hopeful phase of this subject is the fact that fewer foreign bodies in the vitreous are being seen because more men are wearing goggles in their work, and the use of nonshatterable glass in goggles affords added protection. Unfortunately most of the accidents we see are in garages or in industrial plants where these precautions are not observed. I believe in some states the Industrial Commissions insist on the observance of all precautionary measures, including goggles, if the employees are to receive compensation for external or for intraocular foreign body injuries.

DR. JOHN BROWN (St. Paul): One thing has appealed to me which I do not know whether or not Dr. Spratt has thought of, and that is the tolerance, or intolerance, for foreign bodies for the individual in the eye itself. There is something inherent in the individual himself which makes this tolerance to a foreign body, when another one would not tolerate it at all, and whose eye may go on from

(Continued on page 215)

**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Myrtle C. Lee, B.S., Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Who's Who in Public Health in North Dakota



To Robert W. Allen, M.D., Forman, N. D., has been given the honor of the first election to "Who's Who in Public Health in North Dakota," not because of any spectacular achievement, but because he is an outstanding man in a broad, general way. He has planned and successfully executed a

definite public health program for Sargent County on a small, well spent budget; he coöperates with and utilizes the efforts of all unofficial health workers and has the confidence of his Board of County Commissioners.

Dr. Allen, who comes from a family of physicians, was born near Donnellson, Illinois, April 17, 1889. He received his academic and professional training at St. Louis University, the mother Jesuit School of learning in the United States. He took his internship at Rebekah Hospital, St. Louis; practiced at Donnellson, Illinois, for seven years; at Towner, North Dakota, for eight years and has been located at Forman since 1925. He takes an active part in all civic affairs and local organizations, holds a commission in the Medical Officers Reserve Corps and is Vice President of the North Dakota Health Officers Association. He is married and has two fine children, Robert Aaron, 15 and Julia Ann, 13.

Diphtheria Prevention Commission

Governor George F. Shafer, of North Dakota, has shown his interest in public health and the welfare of the people by the appointment of a Diphtheria Prevention Commission. The members of the commission are: Frank Hyland, Devils Lake; Mrs. Inga Norstad, County School Superintendent, Schafer; Father J. A. H. Slag, Bismarck; Mrs. Lillian Lillibridge, Dickinson; T. O. Kraabel, Veterans Service Commissioner, Fargo; Dr. Andrew Carr, Sr., President, State Medical Association, Minot; Miss Grace DeLong, Chairman, State Homemakers Club, Fargo; Mrs. E. A. Jones, President, State Federation of Women's Clubs, Lisbon; Horace Young, Fargo; Mrs. A. G. Porter, Edgeley.

The Commission will work in coöperation with the State Department of Public Health and it is expected that a very effective plan of diphtheria prevention will be developed. In this connection Governor Shafer made the following statement:

"Good health is absolutely essential to the happiness and welfare of every community. Experience has demonstrated that good public health can only

be maintained by the complete eradication of contagious diseases. In recent times the medical profession has done wonders in the science of disease prevention. The success of prevention methods, however, depends largely upon the degree of coöperation which the people give to the public health authorities. The people of North Dakota, I am sure, are sufficiently enlightened and progressive to coöperate effectively with all public health officers in their efforts to eliminate contagious and infectious diseases, and thus protect the people from the ravages of sickness and ill health."

Bismarck's Smallpox Vaccination and Diphtheria Immunization Program for May Day

A city wide drive for 100 per cent vaccination and toxin-antitoxin immunization has been made by the women of the Community Council and various clubs of the city of Bismarck, special stress being placed upon the preschool child, in conjunction with President Hoover's Health Conservation Program for May Day.

Armed with literature furnished by the State Department of Health, the women called at all Bismarck homes, interviewed the parents and urged that the children have these protective measures. The city was divided into forty-eight districts and two women assigned to each district for a house to house canvass.

The physicians agreed to vaccinate and administer toxin-antitoxin at a special rate. The City Commission appropriated funds for the purchase of toxin-antitoxin, while the Women's Community Council supplies funds for the vaccine virus. NO MORE DIPHTHERIA IN NORTH DAKOTA BY 1932.

Health Officers Meeting

May we again remind you that the Sixth Annual Conference of the North Dakota Health Officers Association will be held in Grand Forks May 6 and 7. The program prepared will be very interesting and instructive. No health officer can afford to miss any part of it. All physicians, nurses and health workers are cordially invited to attend these meetings.

The Gorgas Memorial Essay Winner

The state winners in the Gorgas Memorial Essay Contest for 1929 have just been announced. Those of the midwest states are as follows: North Dakota: Vivian Holland, of Fairmount; Montana, Gladys Marie Peterson, of Hinsdale; South Dakota, Verneeta Marie Fisher, of Kidder; Minnesota, Phyllis Fernette Kay, of Little Falls.

This literary contest sponsored by the Gorgas Memorial Institute of Preventive Medicine each year is open to all high schools. The North Dakota Department of Public Health offers its congratulations.

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MINNEAPOLIS, MAY 1, 1930

HEALTH SENSE

In a late issue of the *Boston Evening Transcript* there was an article quoted which had been given at the Health Institute, which came out emphatically against too hurried entrance into summer life and summer clothing. The way clothes are made nowadays it doesn't seem to matter much whether the athlete wears her summer clothes too soon or not. The secretary of the Vermont Department of Public Health is Dr. Charles F. Dalton. He says the word vacation has as many meanings as there are persons to use it. That will give you something to think about.

A vacation should be a change in occupation, but not too radical a change in habits. Let the change from winter's mild recreation to summer's active exercise be careful and gradual. The daily menu on the trip should be at least approximate to the meals one is accustomed to at home. Many go away on vacations of many kinds at home or abroad and they break their former methods of living entirely, with the result that they are brought home dead. If a little more judgment was used as to care in the selection of what they wear and what they eat and how far they go and how long they stay they would probably come home safely. Many who go away from home on vacation change their habits so radically that they develop diseases of

different sorts which probably stay with them the rest of their lives. Still the exodus from Minneapolis to Miami or Tucson to New York will probably go on merrily as it has for years, and those who slip by the wayside, as it were, will not be missed very long. People have a very unfortunate habit of forgetting their friends, particularly if they are dead. They can do nothing of course and perhaps some of the friends who remain take advantage of that occasion to do something they ought not to do. Whatever that is I do not know. Insofar as people use the whole summer to recoup the winter's losses in vitality rather than trying to do all in an intensive two weeks, rushing from one city to another and doing everything upside down as it were, there is a better, slower way. One cannot expect to come home benefited by the change when it is such a radical change; the eyes may be benefited but that is all that could be expected. The general health is apt to be invaded. Then, too, the man of fifty cannot safely indulge in all the sports of the boy of eighteen. Sleep is as necessary in summer as in winter. Light clothing is desirable in summer but cool evenings demand wraps. That is probably why women live longer than men. They are forever going into the house to put on a new kind of wrap!

The tired out heart cannot suddenly take up the shock of an extra load. Flabby muscles require graduated exercise to make them strong. The summer cold is as uncomfortable as the winter gripe, and almost as dangerous. Avoid it; how, the editor does not know. One is as likely to contract a summer cold from flying bacillus as from having someone sneeze in the face. They have their origin, no one knows where. Sometimes they are over in two days and sometimes in four days. Dr. Dalton who also spoke on this subject suggests that one look over well the place where we propose to eat before ordering the lunch. Beware of wayside supplies and farmhouse wells. Best to carry a bottle of water from a protected source. Habits of decency should not be forgotten in the country any more than at home. It seems almost incredible to things that happen away from home around wells and farm houses. The average man from the city will commit all sorts of crimes and depredations when out in the country thinking he is entitled to do anything and everything he pleases. Everything should be scrutinized carefully by someone who knows what country food means. The natural tendency is for the city man to go to the country and

overeat. He thinks he is doing well by himself when really he may be laying the foundation for some chronic physical disorder.

All people who are interested in this subject should read Dr. Morris Fishbein's book "Shattering Health Superstitions." Dr. Fishbein is editor of the *Journal of the American Medical Association* and has written several volumes all of which are instructive and yet popular. He explodes many false theories and notions in the field of "popular medicine." The book is published by Horace Liveright, Inc., New York. Dr. Fishbein in this work is holding out for the condemnation and sometimes for ridicule many absurd beliefs that have established themselves here and there in the popular mind on the subject of health in connection with "popular medicine" and this may be said altogether apart from his unqualified arraignments of faith healing and mediumship. He begins by pointing out that the human being revels in mystery and magic, and that the craving for the mysterious seems to dominate the reason itself except in the case of rare individuals. The editor may say on the side that many people have most strange and absurd beliefs about their health and their physique and what they ought to do. To illustrate, a Minneapolis family decided to sell their home and decided \$5,000 clear to them would be satisfactory; they asked \$5,900. A real estate firm handled the transaction for them; a buyer was found who found the property to be to their liking; but before the deal was completed the wife learned in some way that the property stood on lot 13. That was enough. All her old superstitions, which probably her husband hoped had been forgotten, came to the surface and she positively refused to buy any house located on lot 13. That is just the ordinary condition that exists with many people. While the average man is the victim of all sorts of impossible notions in the matter of health and disease. In times of pain and affliction he casts reason aside and is ready to believe anything that may be urged upon him by neighbors, by the corner druggist and the promoter who has something to sell. Be it faith healing, healing by the power of suggestion or some potion or apparatus whose effects are largely secured through the power of suggestion, the shekels are readily forthcoming. This is largely quotation from an article on Dr. Fishbein's book as given by the *Boston Transcript* and resembles the story of magic in the early days beginning with the stone age. Yet it is to some extent brought up to date by the author's assertion that the average Ameri-

can has had, at least in the past, a woeful ignorance of the structure and workings of his body, and still shows in the present a pronounced subservience to the delusions in this field. Dr. Fishbein tells us that he has seen a multimillionaire seriously expectorate into his palm and splatter the saliva far and wide at the passing of a white horse. As a result of this and many experiences he is not at all convinced that the reasoning power and knowledge of the average man have improved tremendously as a result of the great discoveries made by modern medical science. Most people locate their liver in a place where it is never to be found; they think their bowels are where their stomach is or that they are one and the same; they know absolutely nothing about themselves. They must be instructed very cautiously. The one who undertakes to instruct a patient in a medical viewpoint must remember that the patient is not a doctor; that he is ignorant and needs detailed instruction on the simplest thing.

The writer had the pleasure of serving some time in a state hospital for the insane many years ago and under his care was a woman about 80 years of age who constantly asked for a cathartic. The writer in childlike manner concluded to make some bread pills and give them to her. The next morning she greeted him with, "Good morning, doctor; you think you are pretty damn smart, don't you, giving me bread pills?" She had some real knowledge of what normal things were or of what things she was accustomed to. She had investigated that pill from the outside in and found nothing but bread. Of course, all the effect of the pill was lost; not only the explanation regarding her ailment was lost but also the possible effect that might have come from the bread pill. The same pill or one similar might have the desired effect on some believing patient or it might really produce a catharsis.

Among the delusions that Dr. Fishbein records and shatters are such beliefs as that fish is a brain food; that rubbing one eye will help remove a cinder from the other; how, we do not know except to make tears flow more freely; that pressing the roof of the mouth will help a headache and that whisky will cure a snake bite and kill a cold. That is hardly a proper subject to bring up these prohibition days, but anything goes with the patient who knows nothing about medicine; that tea is more healthful than coffee. the one contains caffen the other theine and one is as injurious as the other. All have read the popular superstition that an apple a day keeps the doctor away. I think perhaps that

depends upon whether the patient has halitosis or not. Then there is the one that cutting the baby's hair weakens him, based probably on the story of Sampson whose hair was cut while he slept and he had the belief that his strength had its origin in his hair; that bear grease rubbed on the scalp will prevent baldness. The writer wishes he had tried that about 45 years ago; he is still bald. In addition there are those that sewer gas is the cause of typhoid; that mosquito bites may be stopped itching if they are not scratched. Don't get in the mosquito region to try this; it is nothing but a fallacy. Also that poultices of cranberries will cure erysipelas; that long flowing hair indicates that one is musical and that a big head is sure evidence of massive intellect. We believe that many bald headed people may be found to be musical and we know a large head as well as large feet and hands are indications of giantism, a disease of the pituitary gland, located at the base of the brain. So we might go on enumerating other superstitions that are wholly without foundation. The writer can easily distort all things as he writes if he chooses and make an ass of himself instead of a doctor. Medical students are easily lead into the developing of illusions. For instance, the average medical student will ultimately, during the first course in medicine, consult with one of the professors regarding his physical condition. Consequently this simple and grotesque editorial ought to teach one the necessity of explaining to the patient, no matter how simple his ailment, with the fullest detail. Very often people get well without more than a good explanation of what is the matter with them.

DR. HENRY MASON WHEELER

Again we pause in the midst of our activities and lay aside the working tools of our profession to pay our tribute of respect to the memory of one of our number, Dr. Henry Mason Wheeler, who on the morning of April 14th, 1930, passed from our ken.

Dr. Wheeler was born in Newport, New Hampshire, June 23rd, 1853. When he was two years of age his parents moved to Northfield, Minnesota. Here the young Henry M., who was later to play such an important part in the history of that city, lived and grew up to manhood, receiving his education in its public schools and in Carleton College. Here he also studied medicine, as was customary in those days, under a preceptor, and then entered the university of Michigan, where he graduated in Medicine in 1877.

Later he enrolled in the College of Physicians and Surgeons of New York, from which institution he graduated in 1880. He came to Grand Forks, North Dakota, in 1881 and made it his permanent residence. He retired from active practice in 1923.

Dr. Wheeler was public minded and always had the best interests of his home city at heart. He served as Alderman in 1913, and later was elected as Mayor and served in that capacity for two consecutive terms. The major projects of his administration were improvements in our water purification system, and street paving.

He held the position of Surgeon of the Great Northern and Northern Pacific Railways and was honored by his fellows by being elected as seventh president of the North Dakota Medical Association. He also held for many years the position of Secretary of the North Dakota Medical Examining Board, where his influence was used in raising the standard of our licentiates.

His mind was clear and keen, his judgment sound and his will strong. These characteristics made him an outstanding figure in professional and community life. With a rugged and rough-hewn exterior he embodied in his personality the spirit of the early West. He was a type of the pioneers who, with vision, foresight and earnest endeavor, laid a sound and enduring foundation for our state.

Dr. Wheeler loved his profession and was jealous of anything that would tarnish its fair name. He was the uncompromising foe of pseudo-healing cults, by whatever name known, and when the North Dakota Medical Association was organized it was he who proposed that the Code of Ethics of the American Medical Association should be adopted as its guide.

Dr. Wheeler was a man of the open. He loved the plains, the woods and the lakes, and his keenest enjoyments were in the sports of field and stream. Since his retirement from active practice he has spent his summers at his home at Spring Lake, Minnesota, close to Nature, her beauties and her charms.

With the passing of Dr. Wheeler the state loses an honored citizen, the community a staunch advocate, and the medical profession a distinguished pioneer physician.

He leaves a wife and son, Master Henry M. Junior, to whom our sympathies go out in overflowing measure.

RESOLVED, That this be spread as a Minute on our records and that a copy be given to immediate relatives.

GRAND FORKS DISTRICT MEDICAL SOCIETY

(Continued from page 211)

bad to worse before the patient arrives at the oculist's. In my experience the young individual is much more prone to these disturbances than the adult. I presume the lens structure has more resistance in adults. In many instances you will have loss of the lens substance if the foreign body pricked the lens, and many go on to cataract. I am beginning to feel that an adult with a foreign body in the eye is a much better risk than is the juvenile.

DR. SPRATT (closing): This subject, of course, is so interesting to ophthalmologists that we could talk all night. Each case is a story in itself. I have seen two cases with cilia in the eye and left them alone. They are not included in this series. There

were two or three in this series that did not know they had a foreign body in the eye. One boy was hanging around a blacksmith shop, and later developed pink-eye, which, however, proved to be an intraocular foreign body. The important points of the whole subject are these: (1) Is the foreign body clean or dirty? (2) Whether it is clean or dirty, the accurate localization is absolutely essential if you are going to treat it properly. If it is back of the eye, leave it alone.

DR. FULTON: Did any of those patients have glass in the eye?

DR. SPRATT: There was no glass; four of them had pieces of granite.

Dr. T. A. Peppard (Minneapolis) read his thesis on "Pedicarditis" and showed lantern slides.

The meeting adjourned.

R. T. LaVake, M.D.,
Secretary.

BOOK NOTICES

INTERNS HANDBOOK. A guide to rational drug therapy, clinical procedures and diets, by members of the faculty of the College of Medicine, Syracuse University, under the direction of M. S. Dooley. Philadelphia: J. B. Lippincott Co., 1929. 254 pages. Cloth, \$3.00.

This book has been written as an aid to interns in corollating school knowledge to bedside use.

The book has been arranged by the members of the College of Medicine at Syracuse University, these men feeling that a standard of exactness is necessary to one who wishes to become professionally responsible. They have attempted to lay down more or less definite ideas which an intern may follow during his hospital training. They feel also that a scientific diagnosis is a point of honor, and that with a definite diagnosis there has been too often little attention paid by the attending staff men to treatment. In the past this has consisted chiefly of a few general directions given to the intern. Such a practice is unlikely to develop therapeutic mindedness.

Considerable attention has been paid to drugs in this book. There is also a good section on clinical procedures, both from a medical and clinical standpoint. Infectious diseases are given a definite, precise order. Laboratory procedures, particularly those necessary for collecting specimens, are given in detail. There is a good section on diet. There is a section on nose and throat procedure, gynecology procedure, obstetrical procedure, emergency surgery procedure.

The book is something which can be as valuable in the physician's library as in the intern's pocket.

—A. E. CARDLE, M.D.

NEWS ITEMS

Dr. S. E. Horwitz is now located in Golden Valley, N. D., where he is in practice.

Dr. J. Vincent Sherwood is taking over the practice of Dr. P. D. Bliss at Colton, S. D.

Major Edwin B. Laynard, post surgeon at Ft. Snelling has received orders transferring him to Panama.

Dr. C. C. Lull, of Topeka, Kansas, arrived in Baker, Mont., to take over the practice of Dr. G. A. King.

Dr. N. O. Pearce, Minneapolis, addressed the Rice County Medical Society at Faribault, April 23, on "Pediatrics."

Dr. Ralph C. Holgate, physician and surgeon of Livingston, Mont., died April 4th. Dr. Holgate was 54 years old.

Dr. Franklin D. Wright, of Minneapolis, delivered a talk at the Hibbing, Minn., Medical Society recently on venereal diseases.

Dr. J. A. Myers, of Minneapolis, gave an address on April 10th at a meeting of the St. Louis County Medical Society in Duluth.

Dr. C. C. Hoagland, of Madison, S. D., has returned from a three months attendance at eye, ear and throat clinics in Vienna, Edinburgh and London.

George Earl, Chairman of the Public Health Education Committee, spoke before the Stearns-Benton County Medical Society, at St. Cloud, April 17.

Dr. R. F. Dundas of Mitchell, S. D., died April 11th, at his home. Dr. Dundas was 80 years old and had practiced medicine in Mitchell for 43 years.

Dr. John A. Sweet, of Great Falls, Mont., died April 6th. Dr. Sweet was 74 years old and was graduated from the University of Minnesota in 1876.

The annual meeting of the Great Northern Railway Surgeons' Association will be held in Grand Forks, N. D., June 19-20, according to Dr. R. D. Campbell, of Grand Forks, association president.

Dr. Chas. R. Christenson, practicing surgeon for more than 30 years, of Starbuck, Minn., has sold his interest in the Minnewaska Clinic there. Dr. Christenson is moving to Minneapolis where he intends to continue his practice.

Dr. and Mrs. Henry L. Ulrich, of Minneapolis, announce the engagement of their daughter, Miss Katherine Ulrich, of New York, to James Wise, also of New York. The wedding will take place in July, after which the couple will go to Europe.

Dr. E. M. Kingsbury, Clearwater, has been chosen president of the Stearns-Benton, Minn., Medical Association. Other new officers are: Dr. H. B. Clark, vice president; Dr. P. E. Stangl, secretary; Dr. F. J. Schatz, treasurer; Dr. C. B. Lewis, delegate to the annual meeting of the State Medical Association.

Executive officers of the Minnesota State Association, including President S. H. Boyer, E. A. Meyerding, Herman Johnson and C. B. Wright, will speak before the annual convention of the Iowa State Medical Association, at Marshalltown, Ia., May 14. On the way they will attend a special meeting of the Mower County Medical Society to be held at Austin, Minn., May 13.

Dr. C. J. Davis, of the University of Minnesota Medical School, has been awarded a year's study in Europe in the field of physical medicine by the National Research Council Fellowship in Medicine. Dr. Davis was given the award for the work he has been doing as assistant at the medical school and general hospital. The award provides for a year's study at the University of Cambridge and Amsterdam.

Bulletins were sent by the educational committee of the state association to Minnesota newspapers during the last month on the following subjects: "Heart," "Carbuncle," "Arthritis," "Eyestrain and the Movies" and "Tuberculosis," during the past month. The last was designed to coincide and cooperate with the regular April early diagnosis of tuberculosis campaign carried on by the National Tuberculosis and the Minnesota Public Health Association.

The first of a series of colloquium post graduate medical short courses offered under the auspices of the Minnesota State Medical Association in co-operation with the University Extension Division began at Willmar, Kandiyohi county, April 17. Brainerd, in Crow Wing county, booked the same series to begin April 23. Winona has also scheduled the course, and Faribault, Litchfield and Owatonna are considering it. These courses are available to any county medical society through the state association for a small fee. They include eight important and interesting events spread over a

period of eight weeks. Tuberculosis, cancer, heart disease, obstetrics, hospitals, immunology and public health are among the subjects scheduled for lecture and demonstration this year.

MEDICAL BROADCAST FOR THE MONTH

The Minnesota State Medical Association Morning Health Service

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Wednesday morning over Station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters.)

Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota.

The program for the month of May will be as follows:

- May 7th—Your Hospital.
- May 14th—Blue Ribbon Children.
- May 21st—Cirrhosis of Liver.
- May 28th—Cause of Headache.

The "Rush Lunch"

To the Alumni of Rush Medical College of Southern Minnesota, Northwestern Iowa and Northwestern Nebraska.

We South Dakota Rush Fellows get together every year for a "Rush Lunch" during the meeting of the South Dakota State Medical Association.

This year the Sioux Valley Medical Association is to meet with our State Association at Sioux Falls, May 20, 21, 22, 1930.

So we extend to you a most cordial invitation to attend our "Rush Lunch" Thursday noon, May 22, 1930.

Professor and Dean Ernest E. Irons, '03, will be our faculty guest and will tell us all about "Dear Old Rush." Plan now to come.

Further notice will be sent you later.

Fraternally yours,

L. N. GROSVENOR, M.D.
Class of 1902.

TENTATIVE PROGRAM OF THE 49TH ANNUAL SESSION OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Sioux Valley Medical Association and Guests
Headquarters, Cataract Hotel

Scientific Sessions and Clinics, Elks Club
General Meeting, Coliseum

Tuesday, May 20th

- 10:00 A. M. Conference of County Health Officers. "Round Table Discussion." A. E. Bostrom, M.D., Epidermiologist State Board of Health, presiding.
- 2:00 P. M. House of Delegates. First meeting.
- 6:00 P. M. Dinner—Past Presidents and officers.
- 8:00 P. M. Council. First meeting.

Wednesday, May 21st

- 7:30 A. M. House of Delegates. Second meeting.
Council. Second meeting.

- 9:00 A. M. "Prophylactic Gastrostomy." Paper and lantern slides. E. P. Quain, M.D., Bismarck, N. D.
- 10:00 A. M. "Normal and Abnormal Labour." Moving picture, lantern and probably clinic. M. Edward Davis, M.D., Associate of DeLee, Chicago, Ill.
- 11:00 A. M. Paper with lantern slides. Subject to be announced. M. Barron, M.D., Minneapolis, Minn.

Noon—Various Alumni Luncheons

- 1:30 P. M. "Sioux Valley Medical Association." Session. Elks Club.
- 1:30 P. M. "South Dakota Medical Veterans' Society." Cataract Hotel.
- 2:00 P. M. Presidential Address. L. N. Grosvenor, M.D., Huron, S. D.
- 2:30 P. M. "Pediatric Clinic." J. R. Gerstley, M. D., Chicago, Ill.
- 3:30 P. M. "Chronic Non-tuberculous Lung Lesion." Edward L. Tuohy, M.D., Duluth, Minn.
- 4:30 P. M. "Varicose Veins." Lantern slides. H. O. McPheeters, M.D., Minneapolis, Minn.
- 6:00 P. M. Association dinner.
- 8:00 P. M. General Meeting. Coliseum. Annual oration—Public health. W. A. Evans, M.D., Chicago, Ill.

Thursday, May 22nd

- 7:30 A. M. House of Delegates. Third meeting. Council. Third meeting.
- 9:00 A. M. "Results Obtained by Irridation Therapy in Carcinoma of Cervix Uteri." Harry Herman Bowing, M.D., Rochester, Minn.
- 10:00 A. M. "General Considerations of the Surgical Thyroid." W. A. Dawley, M.D., Rochester, Minn.
- 11:00 A. M. "Some Factors in the Diagnosis and Treatment of Chronic Arthritis." Ernest Edward Irons, M.D., Dean Rush Medical School, Chicago, Ill.

Noon—Alumni Luncheons

- 1:30 P. M. Address of President-elect. Percy D. Peabody, M.D., Webster, S. D.

Announcements

- 2:00 P. M. "Memorial Exercises."
- 3:00 P. M. "Observations on the Pathology of the Spleen." Lantern. Harold Eugene Roberston, M.D., Prof. Path. University Minnesota Med. School, Rochester, Minn.
- 4:00 P. M. "Paper." Subject to be announced. Donald McCrae, Jr., M.D., Council Bluffs, Iowa.

The Women's Auxiliary will hold their meeting at various times on Wednesday and Thursday.

The Sioux Falls Chapter have a program that will cooperate with the Association in the entertainment of the visiting ladies.

CLASSIFIED ADVERTISEMENTS

Location Wanted

By general practitioner with hospital experience. Competent, no bad habits. Address 715, care of this office.

Locum Tenens

At liberty after May first. Experienced in general practice and surgery. South Dakota preferred. Address 709, care of this office.

At Liberty

Surgical postgraduate nurse, at liberty after April 15. Ability as operating room supervisor or scrub nurse. Can give references. Address 706, care of this office.

Doctor

We can help you to sell your practice—find location—assistant—salaried position. Address Central Physicians Bureau, 1010 Equitable Bldg., Des Moines, Iowa.

Position Wanted

Position in doctor's office by young woman with two years nurses training. Now employed in doctor's office. References. Moderate salary. Address 712, care of this office.

Location Wanted

Physician and Surgeon, graduate of University of Minnesota, has had hospital experience. Willing to buy equipment. Free after July first. Address 696, care of this office.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Wanted

Superintendent for up to date 12 bed hospital in South Dakota town of 1400. State experience as to surgery, anesthetics and laboratory work in first letter. Give height, age, weight and religion, also send photo. Address 708, care of this office.

Practice for Sale

Will sell my \$5,000 to \$8,000 medical and surgical practice, including \$7,500 combined office and residence for \$6,000, part cash. Located in central South Dakota, town of 800. One congenial competitor. Hospital facilities in town. Address 711, care of this office.

For Sale

Twenty years established practice, paying well. Town of 1200 on R. R. in progressive diversified farming territory. Nominal sum for excellent office location; will introduce thoroughly. Nothing to sell. Much EENT, optical and surgical. Address 707, care of this office.

Position Wanted

Technician would like to locate in Dakotas, Montana or Minnesota. Three and one-half years clinical and general office experience in laboratory, X-ray, physiotherapy, basal metabolism and histories. Very best references furnished. Address 714, care of this office.

THE JOURNAL-LANCET

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New Series
Vol. L, No. 10

PANCREATIC CYST*

By OWEN H. WANGENSTEEN, M.D.

MINNEAPOLIS, MINNESOTA

Surgical affections of the pancreas are infrequent. The lesion that the surgeon is most often called upon to treat is carcinoma of the pancreas, for which he ordinarily performs a short circuiting operation permitting the bile to be emptied into the intestinal tract by a cholecysto-anastomosis. Malcolm found mention of four cases of pancreatic cyst in the records of 6,000 post-mortem examinations at Guy's Hospital. In 1912, Guleke found 260 pancreatic cysts reported in the surgical literature. At the University Hospital in the past four years, 3 pancreatic cysts have come under observation, all of which were submitted to surgery. All these patients were women.

CASE 1.—Mrs. M. J., aged 23, hospital No. 36525, gravida II, complained of severe attacks of upper abdominal pain suggesting gall-bladder disease. She had been operated upon two years before entry here, at which time a pancreatic cyst was found and simultaneously the presence of gall-stones was also ascertained. Following drainage of the cyst she improved but complained of attacks of upper right abdominal pain. On admission here, May 12, 1926, a small cyst in the pancreas was marsupialized and the gall-bladder removed. On dismissal from the hospital a drainage tube was left in and she returned for observation a few weeks later. The tube was removed but followed by recurrence of pain. When last heard from she was continuing to employ the drainage tube with no great inconvenience.

CASE 2.—Mrs. A. D., aged 40, hospital No. 46226, gravida IX, was admitted November, 1928, because

of a rapid, painless enlargement of the abdomen. The gall-bladder had been drained in July of the same year. There had been no history of injury. Shortly following cholecystotomy the enlargement in the abdomen was noted. It had rapidly increased in size in the last two months. Since the progressive enlargement of the abdomen began, pain has been less prominent. A diagnosis of pancreatic cyst was made and under ether anesthesia marsupialization of the cyst was done through a left paramedial incision. A large tube was inserted into the cyst after its contents had been evacuated. The contents were a clear, straw colored fluid. A cholecystectomy was done. The gall-bladder wall was thickened but no stones were present. A starch digesting ferment was found in the contents removed. The patient made an uneventful convalescence and on inquiry we are informed that the patient has been well and there has been no persistence of the fistula.

CASE 3.—The patient is the one whom we have here today, Mrs. L. S., aged 29, hospital No. 40688, gravida VII. July 30, 1927, she was admitted with the complaint of intermittent colicky pain in the upper abdomen of 3 or 4 years duration. These attacks seemed fairly typical of gall-bladder disease. On one occasion jaundice had been associated with the pain. Nine weeks prior to admission a progressive enlargement of the abdomen was noted. Associated with vomiting there had been chills followed by fever. The patient was 29 years old at that time and had borne seven children. On physical examination a large protuberant mass was noted in the left upper abdomen. The abdomen at the point of greatest diameter was 93 cm., though the patient had lost 30 pounds in weight despite the progressive enlargement of the abdomen. X-ray examination of the stomach showed a filling defect of the lower half. When the patient was turned in the

*From the Department of Surgery, University of Minnesota.

lateral position the anterior wall of the stomach was seen to come immediately into contact with the anterior abdominal wall being pushed anteriorly by the retroperitoneal tumor mass. The transverse colon was displaced downward. The mass moved but slightly on respiration and appeared fairly fixed; it was semifluctuant in consistency. It was dull on percussion; the tympany of the stomach could be elicited over the mass on superficial percussion. A preoperative diagnosis of cyst of the pancreas was made.

At operation, August 16, (Dr. Strachauer) under ether anesthesia the abdomen was opened through a high left rectus incision. Only one layer of the parietal peritoncum was cut through to come into contact with the cyst. The gastrocolic omentum was incised and the fluid contents of the cyst aspirated with a trochar. A thin straw colored fluid was present. The contents of the cyst were completely evacuated and a tube sutured in place. The patient made an uneventful convalescence and was discharged from the hospital, September 5, 1927. She continued to wear a tube in the wound until early in December at which time it was removed. Since then there has been no drainage at all. The contents of the cyst showed a starch digesting ferment to be present. At operation the gall-bladder was not observed but since the operation the patient has had no more attacks of upper abdominal pain, and cholecystograms made show the gall-bladder to be normal. The patient has complained of occasional fullness in the abdomen but there has been no pain since drainage of the pancreatic cyst.

ETIOLOGY. Trauma has been emphasized by several observers as playing a causative rôle in the genesis of pancreatic cysts. Körte, Honigmann, and others have emphasized this relation. In 1905, Honigmann collected 70 instances in which abdominal trauma seemed to be a definite precursor of cyst formation in the pancreas. In most of these instances the trauma preceded the onset of the progressive enlargement of the abdomen by only a short time. In the majority of instances the enlargement of the abdomen was noted within three months after trauma. Acute pancreatitis is said to predispose to the development of cyst in the pancreas. A number of instances have been reported in which the formation of the cyst followed upon recovery from an attack of acute pancreatitis. Gall-bladder disease is a fairly common factor in most cases of acute pancreatitis though the manner in which it predisposes to the occurrence of the acute pancreatitis is a matter of dispute. Some have insisted that the acutely inflamed biliary passages, because of their lymphatic connections with the pancreas, predispose to the development of pancreatitis; whereas others insist that this predisposition of patients with gall-bladder disease to the occurrence of pancreatitis, has its origin in a reflux of the bile up the pan-

creatic duct occasioned by a block at the ampulla of Vater.

In the literature little mention is made of the association of gall-bladder disease and pancreatic cyst. Dr. Judd, of the Mayo Clinic, in a very splendid article on this subject stated that of 38 cases of pancreatic cyst operated upon 12 had gall-stones and two others presented well developed evidences of cholecystitis in the absence of gall-stones. In two cases reported here gall-bladder disease had previously been noted, and in the third the presence of gall-bladder disease was presumed though operative confirmation of its presence was not made and subsequent study showed the gall-bladder apparently normal. Whereas the more frequent occurrence of acute pancreatitis in women is in agreement with the relatively more common finding of gall-stones in women, pancreatic cyst occurs far more frequently in the male. Undoubtedly this occurrence has its explanation in the relation of trauma to the development of pancreatic cyst, and the far more frequent exposure of males to trauma.

Guleke describes the following types of pancreatic cyst:

1. Retention cyst caused by obstruction of the large pancreatic ducts or obturation of the smaller pancreatic canaliculi and interstitial fibrosis. (Experimental ligation of the pancreatic ducts fails to bring about cyst formation.)
2. Proliferation or multilocular cysts in the pancreas. These are relatively infrequent; occasionally malignant.
3. Degenerative cyst following trauma; degeneration of tumor.
4. Pseudocyst, in which the peripancreatic swelling is frequently in the lesser omental bursa.
5. Echinococcus cyst.

Körte differentiated between so-called "false" and true cysts of the pancreas. Most of the patients suffering from pancreatic cyst who come for relief from their symptoms present a pseudocyst of the pancreas. The distinction between false and true cysts of the pancreas often remains an operative one in which the presence or absence of direct origin of the cyst from the pancreas is ascertained. Neither the contents nor the epithelium of the cyst serve to differentiate the two. True cysts of the pancreas may not have an epithelial lining and the ferment of the pancreas may not be present in the cyst contents owing to the prolonged retention of the fluid contents. On the contrary, a pseudocyst may present all of the pancreatic ferments and may also present an epithelial lining. The differen-



Fig. 1: Contour of abdomen in pancreatic cyst. (Case 2.)

tiation, therefore, is largely an academic one. In the true cyst, however, two layers of parietal peritoneum are usually cut through, to gain access to the cyst. Whereas in pseudocysts only the anterior parietal peritoneum need be incised and the peritoneum of the mesentery through which the approach is made.

The contents of either cyst may be straw colored, bloody, or even mucoid in appearance.

SYMPTOMS. Severe pain frequently characterizes affections of the pancreas (carcinoma of

the pancreas excluded.) Pain on the left side of the abdomen in an attack of colic which in every other respect appears to be biliary in nature suggests the possible coexistence of a pancreatic disorder. Zoepffel at the Barmenbeck Krankenhaus at Hamburg has pointed out in biliary colic the significance of this left sided pain for pancreatitis, as have also Schmieden and Sebening. In pancreatic disorders the pain is oftentimes severe. Moynihan states that the most excruciating pain that the human being is ever called upon to suffer is that of pancreatitis. In pancreatic cyst and pancreatic calculus the pain is frequently very severe. Occasionally a progressive enlargement of the abdomen is the only symptom of pancreatic cyst. Occasionally it follows fairly directly upon the receipt of abdominal trauma. Many times when there has been an antecedent history of abdominal colics these symptoms cease with the rapid enlargement of the abdomen. Chills and fever are occasionally present.

DIAGNOSIS. The occurrence of a large swelling in the upper left abdomen that is protuberant in nature should suggest the possible presence of a pancreatic cyst. I remember hearing Dr. A. T. Mann, in discussing Dr. Judd's paper, refer to the fact that Dr. J. Collins Warren, of the Massachusetts General Hospital



Fig. 2: Defect in stomach outline after ingestion of barium produced by cyst of pancreas. (Case 3.)



Fig. 3: Displacement of stomach toward anterior abdominal wall as seen in lateral view.



Fig. 4: Displacement of colon after barium enema.



Fig. 5: Displacement of stomach toward spinal column as observed in lateral view in case of intraperitoneal tumor. The patient had an extremely large liver with obstructive jaundice due to carcinoma of the hepatic bile duct.

had walked into the operating theater when a patient with a swelling in the left upper abdomen was being operated upon. The abdominal incision was being made. Dr. Warren said, "I see you have a pancreatic cyst." The surgeon stated that he had studied the case thoroughly and had failed to come to a conclusive opinion. Inspection in abdominal diagnosis is always a valuable criterion.

I recall seeing a patient with a large abdominal swelling. It was the opinion of several medical consultants who saw the patient, that she had an ascites for which she was referred for abdominal paracentesis. A surgeon saw the patient for the first time on the operating table from across the room and said, "That is not ascites." The protuberant swelling of the abdomen rather than a broad fullness in the flanks was almost incontrovertible proof to him that an encapsulated tumor or cyst was present in the abdomen. When cut down upon under local anesthesia a large tumor of the ovary filling the entire abdomen was found.

A pancreatic cyst may usually be moved about rather easily, though it moves usually very little with respiration. It is ordinarily round and

smooth and not tender. Frequently fluctuation may be made out. Occasionally pulsations are transmitted from the abdominal aorta which lies beneath.

The X-ray is invaluable in arriving at a diagnosis. The lower portion of the stomach frequently can only be filled out with difficulty following the administration of barium. There is also commonly present a widening of the duodenal loop caused also by lesser enlargements in the head of the pancreas. When the patient is turned in the oblique view the stomach is seen to be compressed unduly, so that the anterior and posterior walls of the stomach lie almost in immediate contact with one another, both being in immediate proximity to the anterior abdominal wall. Inflation of the colon with air or a barium enema demonstrates the colon to be pushed downward; in the oblique lateral view, it also comes into close contact with the anterior abdominal wall. Dr. Rigler, our roentgenologist, has on a number of occasions demonstrated how valuable the X-ray is in determining whether a large abdominal swelling is intra- or retroperitoneal.

DIFFERENTIAL DIAGNOSIS. Pancreatic cyst has

frequently been operated on under the diagnosis of ovarian cyst. The latter, however, being intraperitoneal, the cyst comes into immediate contact with the anterior abdominal wall and is dull on percussion and the intestines are displaced backward; whereas in pancreatic cyst the stomach and colon are pushed forward, and on gentle percussion tympany is easily made out.*

The accompanying X-ray figure demonstrates the displacement of the stomach and colon in a case of enlargement of the liver. The stomach is pushed to the right and the colon is pushed downward. The lateral view demonstrates the stomach being pushed backward. A distance of 5 to 6 inches intervenes between the intra-abdominal wall and the stomach, as contrasted with the immediate proximity to the anterior abdominal wall of the pancreatic cyst.

A mesenteric cyst oftentimes can not be differentiated from a pancreatic cyst. The finding of a cyst in the left epigastrium with an antecedent history suggesting pancreatitis frequently serves to differentiate. Occasionally when the symptoms are those of pressure only a preoperative diagnosis of retroperitoneal tumor, probably cystic only, can be made.

Cysts of the left suprarenal gland have been confused with pancreatic cyst. The diagnosis is usually an operative one. Soft enlargement of the retroperitoneal lymph nodes occasionally can not be differentiated from pancreatic cyst.

Omental cysts occasionally give rise to confusion in diagnosis, but like other intraperitoneal swellings they displace the intestines and stomach backward.

Cysts of the left lobe of the liver have been confused with pancreatic cysts, but the posterior displacement of the stomach and colon would serve to differentiate such a condition from a pancreatic cyst.

Phytobezoar, or hair ball in the stomach, has occasionally caused difficulty in being differentiated from a retroperitoneal swelling, but careful fluoroscopic examination of the stomach partially filled with barium in pancreatic cyst would demonstrate normal rugæ in the stomach, the lumen being small due to pressure from without. In the presence of a large body within the stomach, the stream of barium would be diverted around the intragastric mass.

*I have recently seen a large ovarian tumor that presented all the physical findings of retroperitoneal swelling. The right colon was pushed to the left and brought into immediate contact with the abdominal wall. The swelling conformed fairly well to an enlargement of the kidney. On cystoscopic examination, however, the function as well as the pyelogram of the right kidney were normal. The direction of the ureter was not altered by the tumor mass, clearly indicating its intraperitoneal origin.

Hydronephrosis may occasion some difficulty in diagnosis. Cystoscopic examination and determination of poor or absent function on one side together with the pyelogram would adequately determine whether or not the kidney was concerned.

Thus far tests of pancreatic function have been of little value as diagnostic measures. Uncomplicated cysts of the pancreas rarely disturb the internal secretion of the pancreas, and blockage of the two large excretory ducts by cysts is equally unusual.

Small cysts in the pancreas are only infrequently recognized preoperatively, and will always continue to be operative diagnoses.

TREATMENT. The first successful operation for pancreatic cyst was performed by Dr. Bozeman, of New York City, the patient being operated upon by complete extirpation of the cyst in 1881. He operated under the diagnosis of ovarian cyst. The development of the surgery of pancreatic cysts is usually associated with the name of Professor Gussenbauer, of Prague. In 1882 he correctly diagnosed preoperatively the presence of a cyst and drained it. The patient made a splendid recovery. Gussenbauer also pointed out the value of inflation of the stomach and colon in determining the relation of the cyst to the overlying structures. Gussenbauer's patient became ill following the ingestion of seven liters of "bad beer" and two sausages; to assuage his feeling of ill being the patient drank two bottles of wine, whereupon he began to vomit and was brought to Gussenbauer's clinic. Alcohol has been thought for a long time to play an etiological rôle in the development of pancreatitis, though the manner in which it predisposes is not well known.

Extirpation or marsupialization are the two methods of surgical attack that one has at one's command in dealing with a cyst of the pancreas. In 1905, Exner, of Hochenegg's clinic, in Vienna, pointed out that of six instances in which marsupialization had been practiced that a persistent fistula obtained in two of the instances. He therefore decried the operation of drainage, pointing out the absence of sequelæ in instances in which extirpation had been practiced. Goebell, of Helfereich's clinic in Kiel, in 1907, referred again to the fact that patients on whom extirpation was practiced remained well. Several authors have indicated that because of the occasional occurrence of pancreatic fistula that extirpation is to be preferred to marsupialization. Extirpation is indeed the op-

eration of election, but it is done at a greater operative risk than is simple drainage. Marsupialization is a very simple operative procedure and should entail but little risk. A 3 to 4 per cent mortality is reported; whereas the risk of excision in reported cases is about 10 per cent.

Pseudocysts more frequently than true cysts of the pancreas give rise to pressure symptoms that necessitate operation. The majority of these are very amenable to external drainage and persistent fistulas are uncommon. Proliferation cysts or cyst adenomas of the pancreas are better extirpated because the complication of persistent fistula is more constant.

Jedlicka has recently implanted the persistent fistulous tract into the stomach with success for pancreatic fistula. Lahey has similarly successfully treated persistent external biliary fistula. In the few instances in which a persistent fistula remains this would seem to be the operation of choice; this operation can be performed with little risk and carries little danger of infection for the pancreas. Hans Kehr, a number of years ago, transplanted such a fistula into the gall-bladder and anastomosed the gall-bladder to the stomach.

The presence of the tryptic ferment in the discharges of the cyst occasionally causes an excoriation of the abdominal wall which may prove to be troublesome. Suction, together with the employment of "Bovine" as recommended by Potter, of St. Joseph, Missouri, are helpful aids in dealing with this unpleasant complication.

Wohlgemuth has suggested the employment of a diabetic diet to facilitate the closure of pancreatic fistulas. It has been my experience that this is of little avail. Atropine and sodium bicarbonate have also been suggested. Suction and a fluid absorptive medium upon which the digestive ferments of the pancreas can act will more than other measures take care of this complication.

Diabetes is an occasional complication of pancreatic cyst especially in those instances in which excessive degenerative changes are present in the pancreas. In true cyst of the pancreas following upon attacks of acute pancreatitis in which gangrene or sloughing of a good portion of the tail of the pancreas occurs, diabetes is unavoidable. In the 38 cases reported by Judd, 2 patients had diabetes at the time of operation; both survived a year, and later died in coma. One died of diabetes after operation; 4 had sugar in the urine that cleared after operation.

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ECLAMPSIA IN THE NEWBORN

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"Eclampsia" as used in this article, refers to the convulsions occurring in newborn infants whose mothers have been suffering from eclampsia or from a toxemia without eclampsia, and should not be confused with other general convulsions.

These convulsions begin during the first few days of life. They are clonic in nature. Cyanosis is very pronounced.

In recording the cases which have come under the observation of the Clinic during the last year, the one constant factor and exciting cause seems to warrant the conclusion that the toxic substances can be excreted in the mother's breast milk, thus increasing the amount of toxin to the point of producing convulsive attacks in the infant.

The following are brief summaries of two cases studied during the last year:

CASE 1.—Mrs. L. E. S., age 25, came under observation on November 11, 1929, with history of four months pregnancy. Family history negative, previous illness negative. The systolic pressure registered 115, diastolic 70, urinary examination negative. The subsequent urinalysis continued negative until on February 3, 1930, when the urine showed a trace of albumin. On February 15, 1930, this patient developed general edema, headache, and much albumin in urine. The systolic pressure registered 158, diastolic 90, pulse 74 per minute. The patient was admitted to the Sisters Hospital on the morning of February 16. In the afternoon of February 17, eclamptic convulsions developed. At 5:30 P. M. a Cesarean operation was performed. A live baby boy was delivered, three pounds and two ounces in weight. The infant was placed in the incubator room and given lactic acid feedings. The mother made an uneventful recovery. The breasts were pumped and the milk discarded. The baby continued with the lactic acid feedings for five days. On the sixth day we elected to try mother's milk. On the seventh day the baby began to vomit the feedings and on the eighth day developed clonic muscular convulsions with extreme cyanosis. The lactic acid formula feeding was again substituted. On the ninth day the baby developed two mild eclamptic convulsions. On the tenth day the baby was apparently normal and continued a normal gain in weight.

CASE 2.—Mrs. H. R., age 19, came under observation of this Clinic on December 13, 1929, with a history of seven months pregnancy. Family history negative. The systolic pressure 130, diastolic 80, urinary examination negative. The urinalysis continued negative until January 12, 1930, when the urine showed a slight trace of albumin. On February 7 the urine showed two plus albumin. On February 12, the urine continued to show much albumin. The systolic pressure was 145, diastolic 90. On February 19 the urinalysis indicated a greater amount of albumin, the systolic pressure was 165, diastolic 100, pulse 72. The patient complained of a slight headache, no edema or epigastric pains. On February 19, the patient was admitted to the Sisters Hospital. The urine continued to show considerable albumin and the systolic pressure continued to register between 145 and 160. On March 4, the patient went into slow but normal labor without eclampsia. On March 5, a normal baby boy was delivered, weight seven pounds, twelve ounces. The baby was placed to the breast in eight hours and continued to nurse every three hours. On the third day the baby vomited his feedings and soon developed clonic muscular twitchings with extreme cyanosis. On the fourth day the baby was given a modified cow's milk formula, and had one mild eclamptic convulsion. On the fifth day, the baby was apparently normal and continued a normal gain in weight. The mother continued a normal puerperal period. On the ninth day the baby was again placed to the breast and continued a normal gain in weight without further recurrence of convulsions.

CONCLUSIONS

1. A mother, with symptoms of severe toxemia, can transmit through the placenta toxic substances into the blood of the newborn.
2. It is evident that these substances may be excreted in the mother's breast milk, thus increasing the amount of toxins above that already in the child's blood, sufficiently to produce eclamptic convulsions in the child.

TREATMENT

It would seem proper to avoid giving the breast milk until after the eighth day, having the breasts artificially emptied and the milk thrown away.

CLINICAL PATHOLOGICAL CONFERENCE

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The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

A—30—632.

Man, 88 years old, entered hospital April 15, complaining of dyspnea (3 weeks), cough (6 months), kidney trouble (3 years). Had had to get up at night once or twice to urinate. Not enough trouble to have treated. Six months ago was in bed with a bad cold and ever since had had a cough; not very productive; no blood. Condition remained about the same until three weeks ago when he became very short of breath. He was treated by a physician for the past six months without relief.

Health always good. Had diphtheria with quinsy 30 years ago; dizzy spells 20 years ago. Read fairly well with glasses; eyes blurred at times. Deafened since 16; said to be due to quinine for malaria. Appetite good. Memory failing; could not remember recent or remote events very well. Said he was nervous. Slept well. Smoked moderately. Father dead, 84, asthma. Mother dead, 80, senility. Seven brothers all dead, causes unknown. Three sisters died of old age. No history of malignancy. Wife dead for the past 30 years. Four children, one dead of pneumonia at 18 years, 3 living, 2 boys and 1 girl. It was later learned that one of the sons has active pulmonary tuberculosis. Occupation gardener.

Examination: elderly white man, lying in bed in orthopneic position; apparently no pain; no cyanosis. Breathing was labored. Senile keratosis of face and hands. Patient oriented, but, because of partial deafness and forgetfulness, did not give coherent replies. Eyes dilated (homatropine). Ptosis of left lid. Slight ectropion of both lower lids. Slight bilateral conjunctivitis. Edentulous. Anterior posterior diameter of chest greater than lateral. Marked kyphosis in thoracic spine, scoliosis to left. Left side of chest larger than right and moved more freely. Whole thorax moved but slightly and there was constant use of accessory muscles. Dullness of entire right chest increasing to flatness at base. Upper portion of right chest showed bronchial tubular breathing. Left chest, numerous coarse rales. Heart tones heard best on right side, clear and distinct. Blood pressure 110/80. Pulse 90. Abdomen scaphoid type. Liver and spleen not felt (dextrocardia?). Slight enlargement of prostate. No definite nodules. Reflexes normal. Thoracentesis, right midaxillary line, fifth interspace, hemorrhagic fluid obtained.

Urine positive albumin and sugar once. Hemoglobin 85 per cent; white blood cells 22,050; red cells 2,740,000; polymorphonuclears 86 per cent; lymphocytes 12 per cent, monocytes 2 per cent. Culture of pleural fluid: many red blood cells; no bacteria seen. Stool negative. Urea nitrogen 18.66 mg. Sputum many pus cells, no acid fast bacilli or malignant tissue. April 22, pleural fluid, no growth. Blood Wassermann negative. X-ray (portable machine) showed thickening of the right pleura with parenchymal infiltration of the lung and fibroid tuberculosis of the apex.

April 23, early in the morning, had attack of pain in left side with profuse perspiration and cyanosis. Appeared frightened. Heart 140; auricular fibrillation. Left lung full of rales. Right lung as before. Respiration 24. Mentally clear. Temperature 101°. Blood pressure 80/50. Exitus 7:40 P. M. (7 days).

Temperature 89.4° to 102.3°. Pulse 80 to 110. Respirations 20 to 36. Medications: eocoin sulphate, morphine sulphate, caffeine sodium benzoate, adrenalin.

Post-mortem report. No edema; no jaundice; marked emaciation. About one liter of cloudy hemorrhagic fluid in the left pleural cavity; about two liters of similar fluid in the right cavity. 200 c.c. of clear fluid in the pericardial sac.

Heart weighs 270 grams. It is markedly displaced to the left. No disease of the heart.

The right lung weighs 1,170 grams and contains a large tumor, 10 cm. in diameter in its central portion, adjacent to the hilus. Microscopic sections show this to be an adenocarcinoma. Calcified Ghon tubercle in the right lower lobe. Old healed tuberculosis in the left apex.

No metastases from the tumor. Marked atherosclerosis. Acute bronchopneumonia.

Diagnosis. Primary carcinoma of the right lung with pneumonia and pleurisy.

Comment. Carcinoma of the lung was not clearly recognized because only a portable X-ray apparatus could be used. The immediate cause of death was bronchopneumonia.

A—30—626.

Woman, 24 years old, admitted March 26 and died April 23 (28 days later). Tonsillectomy 1921. Attack of rheumatism in the spring of 1927. This affected the hip joints first, then migrated to other

joints. Joints were red and painful at this time. Trouble subsided during the summer of 1927. No further attacks until the present illness which began in February, 1930. Her chief complaints on admission were dyspnea, precordial pain which was of sharp, stabbing character and radiated to the left shoulder.

Examination. Head negative. Eyes reacted normally. Ears and nose normal. Teeth good; several fillings. Throat, no injection or reddening. No note of condition of tonsillar fossæ. No adenopathy of neck. Expansion of chest free and equal. Percussion normal. Palpation, no bulging. Tactile fremitus normal. No râles. Heart rapid; murmur heard over entire precordium; visible pulsation, especially below level of third rib. P. M. I. very prominent in fifth interspace to left of midclavicular line. Heart apparently slightly enlarged, by percussion. Blood pressure, 100/60. Abdomen, no masses, scars, or ascites. Liver and spleen not palpable. Probable slight edema of legs; reflexes normal except left knee jerk was not obtained.

March 3, very dyspneic. Nausea and vomiting several times that day. 7 p. m. felt a very peculiar sensation along sternal margin, as if bubbles of air were escaping. Pulse very rapid, 100 to 120. Respirations, 36. Definite rub could be heard along sternal margin from second to fifth interspace. It sounded as if two pieces of leather were being rubbed together. Could also be heard over the precordial area and very well in the left anterior axillary line. Many fine crepitant râles, right base. Area of bronchial breathing. Rub posterior above level of sixth dorsal spine, extending out to angle of scapula. A few coarse râles over left base. Increased spoken and whispered voice transmission. Dullness over this area. March 4 very uncomfortable; abdominal distention; expelled much gas. 8 p. m. feeling much better. Taking fluids by mouth. Respiration less rapid and labored. Area of dullness in bronchial breathing over left posterior chest, with moist râles over right. April 5, physical findings the same; felt better; color good; questionable pleural friction rub at right base posteriorly. No notes between March 4 and April 5.

Cardiac dullness extended completely to axilla and there was flatness rather than dullness. Pericardium tapped in fourth interspace, left sternal border, but no fluid obtained. Deemed unwise to tap outside of apex because of evidence of pleuritis. Thought that consolidation in left lower lobe was too extensive for lung compression by enlarged heart. April 6, friction rub not so definite. Slight accumulation of fluid at left base. Now impaired resonance over right lower lobe. Breathing bronchovesicular to distant tubular, suggesting consolidation here as well. April 8, thoracentesis; 500 c.c. turbid fluid obtained from left side. Findings about the same except pulse was decreased and was of better quality. April 10, thoracentesis, right, 350 c.c., left 500 c.c. Fluid from right: cell count 2,350 white blood cells, many red cells; marked amount of albumin. Enema for distension. Patient about the same.

April 11, condition about the same. Felt fairly well. April 12, much better. Itching dermatitis of back. No dyspnea; not irrational; breathed easily. April 13, thoracentesis, right 350, left 150 c.c.; fluid

thick. Experienced some relief following removal of same. April 15, complained of noise, believed to be emotional. Dyspnea and some increase in pallor. April 16, blood culture grew short chain streptococci, positive at end of 18 days. April 18, thoracentesis, 1,000 c.c. (350 from left and 600 from right). April 22, suddenly turned worse, with marked acrocyanosis, extremities cold and clammy; respirations rapid, gasping, and pulse thready, moribund. Exitus April 23, 8:25 A. M.

Laboratory: occasional finding of sugar in urine; occasional trace of albumin; sediment, occasional finding of red blood cells. Blood on entrance: hemoglobin 65 per cent; red cells 3,070,000; white cells 10,550; polymorphonuclears 76 per cent, lymphocytes 23 per cent, basophils 1 per cent. Blood urea nitrogen 14.93; sugar .093. Pleural fluid April 2, large gram positive diplococci and many staphylococci. April 3, hemoglobin 54 per cent; white cells 16,400. April 7, pleural culture, a few long chains of streptococci and many *B. coli*. April 16, pleural culture, many gram positive cocci in pairs and occasionally three or four probable streptococci and some staphylococci. April 22, hemoglobin 65 per cent, white cells 19,950.

X-ray March 27, single chest, bedside, cardiac enlargement, pulmonary congestion, probable pleural effusion, left. April 3, chest, pericardial effusion and massive dilation of heart. April 7, chest, bedside, cardiac enlargement, possible pericardial effusion; probable pleural effusion, left base; probable beginning lobar pneumonia, right lower. April 17, diffusely dilated heart; bilateral pleural effusion.

Eye grounds, normal fundi March 31. Blood pressure, average systolic 100, average diastolic 60.

Therapy: morphine sulphate, digitan, sodium salicylates, cinchopen, digitan ampoules, restricted fluids, enema, continuous ice cap to cardiac region, luminal, cascara, proctoclysis, forced fluids, high caloric diet, sodium bicarbonate, tap water enema, glucose proctoclysis, pituitrin, allonal, caffeine sodium benzoate, codein sulphate, calamine lotion, rectal tube, applications of heat, adrenalin, artificial respiration.

Temperature, septic, 99° to 101°. Pulse, 90 to 130. Respiration, 20 to 44.

Post-mortem report. Slight edema of the ankles; no jaundice; 500 c.c. of slightly bloody fluid in the right pleural cavity; 300 c.c. in the left. Pericardial cavity obliterated by recently formed adhesions. Heart, 530 grams. Fresh mitral and aortic endocarditis of rheumatic type (small firm vegetations); old aortic valve defect of rheumatic origin; left ventricular hypertrophy.

No pneumonia. Spleen, 325 grams (acute splenitis). Marked passive congestion of the liver. Cloudy swelling of the kidneys.

Diagnosis. Acute rheumatic endocarditis developing on an old rheumatic valve defect. Acute pericarditis and acute pleuritis.

Comment. The first attack of rheumatic fever was responsible for the old aortic valve defect. The terminal attack of rheumatic fever is represented by the fresh vegetations on the aortic and mitral valves. The proper diagnosis for this case is rheumatic endocarditis. Death is due to sepsis along with cardiac decompensation.

HEREDITY, EUGENICS AND HUMAN BETTERMENT

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While much has been done during late years to prevent disease and improve health, by improving man's environment, there has been very little done at any time to improve man himself in his innate, inborn mental capacity.

A work with this end in view might well be started, it seems, by the JOURNAL-LANCET. There is great need for such work, since people of stunted intellects and moral defects are scattered all through society. Such persons are responsible for nearly all crimes that are committed and for most of our social ills, including the spread of venereal diseases.

Removal of such persons from society as rapidly as it can be done in a legal and humane way is essential for permanent human betterment, and in order to have society composed wholly, as it should be, of persons who are sound in mind and morals.

This better condition can very certainly be secured by the wise use of the laws of heredity and the principles of eugenics. This article therefore points out in part how heredity acts in transmitting qualities, good or bad, and how the better types of people may be increased and inferiors humanely eliminated.

It is now generally known that each plant and lower animal comes from a female reproductive cell, after it has been fertilized by a male reproductive cell. That fact is taught to the boys and girls in our common schools, in their study of botany and physiology. And we older people know that every person who ever lived came from a female reproductive cell called the ovum, after it was fertilized by a male reproductive cell called the spermatozoön.

These cells contain certain short, dark colored, thread like bodies called chromosomes, which are the bearers or carriers of all that is transmitted from parents to their offspring. The chromosomes change somewhat in appearance at different stages of the ripening and development of the reproductive cells, but they can be seen and counted under the microscope. Their number varies in the reproductive cells of different kinds of animals and plants. In the germ cell of the seed of the tobacco plant their number is twenty-four, the same as in the human reproductive cell.

In the chromosomes—and this is the great fact to bear in mind—there are “determiners” so-called, which, during the development of the fertilized ovum bring into proper form the various anatomical structures which the young animal is to possess. For every bone in the body and for every nerve and muscle there are determiners. For each different part of the brain, heart, lungs, and for each distinctly separate structural part of the body, there is thought to be a determiner in the chromosomes of the reproductive cells, and each determiner, I repeat, brings out during the early development of the animal the anatomical structure to which it is related. If there should be no determiner for a certain bone, or if the determiner is a defective one, the bone would be absent or defective in structure. No animal can have any organ or part except that for which there is a determiner.

In the chromosomes of some people there are determiners for feeble-mindedness, or if not there is an absence of determiners for normal mindedness, and the outcome would be the same in either case. If in the chromosomes of both parents there is a determiner for feeble-mindedness, then their child early in its development will get a double dose, so to speak, of determiners for feeble-mindedness, and will very certainly be feeble-minded. There is perhaps no exception to the law that when both parents are feeble-minded, by heredity all of their children will be feeble-minded. On the other hand when in the chromosomes of both parents there are determiners for normal mindedness or for any other good and desirable trait, their child early in its development will get a double dose of determiners for that trait, whatever it may be, and will very certainly possess the trait in strong degree.

Inborn capacity is thus fixed by the determiners, and fixed irrevocably at the time of the fertilization of the female cell. From that time on until birth the laws of heredity have complete control, ruling out disease and accident, and no act of man, it seems, can change results, can add to or take from them. These fundamental biological facts, briefly outlined, have come to us almost, as some one has said, like the burst of

a new sun out of heaven, and on these and related facts the science of eugenics is based.

The first great purpose of eugenics is to promote marriage matings between persons both of whom carry in the chromosomes of their reproductive cells the determiners of desirable traits. The second is to prevent, so far as possible, reproduction by persons in whose chromosomes there are determiners of undesirable traits or mental defects, for in this way only can socially unfit persons be eliminated from society and a better human stock be bred, a stock with mental capacity to respond fully to educational stimuli and to absorb and apply useful knowledge. Man can be improved permanently only by beginning his origin in the better grades of germ cells in which human life starts. These cells are the human seed, and like any other seed they determine what the nature of the crop and its quality shall be.

And I am stating only what science clearly indicates when I say that education, while indispensable, affords only temporary betterment of man, because it is an after birth affair, and ordinary impressions made and traits acquired after birth are not passed on by heredity in perceptible degree to offspring, because they do not affect the determiners nor create new ones. Education of one generation does not therefore improve the next in mind or morals.

But with our present knowledge of heredity man could take his further mental evolution into his own hands, and in three generations advance it greatly. In that time or less the wise use of biological laws do produce, as we all know, superior types of plants and lower animals. It took the red man a thousand years, we are told, to develop a certain kind of Mexican grass into Indian corn. No science was used in doing it. Nature acted blindly, depending on wind and insects to bring about fortunate pollination of the growth from season to season. But Luther Burbank took this same Mexican grass, it is said, and in eighteen seasons by selective pollination produced a fine quality of corn.

Until now the great mass of humanity has perpetuated itself at random, by chance, with

but little thought of improving itself. Poor quality of material has been built into most human automobiles, and then we have tried to make them good machines by education and religion. We are slowly learning that it cannot be done, and that we must look to good breeding, to eugenics, for permanent race betterment.

A sane eugenics program for human betterment would provide:

1. For sterilization of some of our socially unfit persons.
2. For segregation of others.
3. For teaching, especially to young people, the great facts of heredity and eugenics.

A comprehensive State Eugenics Program would provide for the grading of its citizens as to their hereditary soundness; their in-born mental capacity; their physical structure and its efficiency, from which would be deduced their fitness to procreate.

A program for race betterment in which every intelligent person might engage would be this:

1. Suggest to your minister that he preach sermons on eugenics, and organize young people's eugenic study classes.
2. Urge your physician to advocate biological race betterment, and advise against the marriage of inferiors unless they be sterilized.
3. Encourage in young people pride in good heredity. It would promote better marriages.
4. Encourage parents to have their children read something on eugenics.
5. If you believe the movement for innate race betterment, and the abolishment of vice and crime thereby, is a worthy one, *Speak of it to your state legislators* and urge the enactment of an adequate sterilization law.
6. Place in the hands of young people suitable leaflets calling attention to the essentials of heredity and eugenics. They need such knowledge for personal and social protection and to avoid unwise marriage matings, for the bad results of which in the form of delinquent children and disappointed parents, no amount of education, good laws, prayers, tears or hospital care can ever compensate.

EPIDERMOPHYTOSIS OF THE HANDS AND FEET

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ROCHESTER, MINNESOTA

Probably no disease of the skin is of more practical significance in this country than epidermophytosis of the hands and feet. The condition has become endemic, and periodically epidemic, one might say almost pandemic. I have been told by dermatologists who have a large clientele that about a third of their practice consists of the treatment of such cases, and I feel certain that the general practitioner must encounter them frequently. As yet, apparently, there is no single method of treatment that assures ideal results. If treatment is conducted with certain facts in mind and with such measures as are the common property of the profession, the results, usually, are satisfactory. The facts to be considered are that: (1) there are three different clinical types of the disease, intertrigonal, vesicular, and hyperkeratotic; (2) hypersensitiveness may have developed either in a predisposed person or as a result of prolonged infection, or both; (3) damp, warm places are hotbeds of infection; (4) infection from epidermophyton does not convey immunity, and hence there is constant opportunity for reinfection; (5) dryness is inimical to the growth of the epidermophyton, and (6) the soil (the general condition of the patient) determines to a considerable measure the behavior of the infection.

It is apparent that the diagnosis must be definite. Since this lesion manifests itself, in the main, in three different clinical forms, a considerable number of other lesions of the skin must be considered in the differential diagnosis. Usually a final diagnosis cannot be made unless the infecting organism is demonstrated under the microscope. This can be done in most cases by subjecting some of the scales from the infected region to a corroding process with a solution of 30 to 40 per cent potassium hydroxide for not less than half an hour. Proper corrosion will help to avoid mistaking artefacts for the organism. Such mistakes are easily made.

In the vesicular type of the disease it is customary to decapitate a vesicle, turn the concave side upward on the slide, and then cover it with the corroding solution. In the intertrigonal type, a piece of pellicle which may be removed readily usually will contain the organism, but it

may be demonstrated with difficulty in the hyperkeratotic type. Fortunately the last type is not common. Cultural methods may help to locate the organism, but not often if the corrosion method gives negative results. Cultural methods are not so readily accessible to physicians, and their greatest value lies in the possibility of differentiating various species. This, however, is of minor importance for practical purposes.

When the diagnosis has been definitely made, one of the common methods of treatment is instituted. Among these might be mentioned the popular Whitfield's ointment which contains salicylic acid and benzoic acid. This preparation was once hailed as a specific, but, in the last few years it has lost some of its rating. Salicylic acid in other ointments, in lotions, and particularly in alcohol; various combinations of sulphur, iodine, and mercury; various preparations of tar; some ethereal and essential oils; chrysarobin; picric acid; the dyes such as mercurochrome, gentian violet, acriflavine, and, somewhat recently, Castellani's paint, which contains acid fuchsin and resorcin, are frequently and effectively used. Ultraviolet light and Roentgen rays have been, and are, favorites. I have not obtained satisfactory results with the former, except when it was given to the point of exfoliation and this usually can be accomplished more conveniently by some other method. Roentgen rays fairly often are effective, but should be administered by an expert. It is likely that their effect may be ascribed in part to the inhibition they exert on the action of the sweat glands, and, therefore, their drying effect.

When allergy or hypersensitiveness has developed, irritating preparations, in the main, should be avoided. Most of the dyes may be used, but it is usually good policy to apply wet dressings of boric acid, aluminum acetate, potassium permanganate, or some other mildly astringent lotion, until the acutely inflammatory phase has subsided. Not uncommonly, the entire process will subside under these milder preparations.

The hyperkeratotic type requires the more powerful keratolytics, even corrosive and destructive measures.

All these and other methods have attained

some popularity in the hands of different observers, but it is a striking fact that they fail almost as often as they succeed. It is not uncommon to find a patient who strongly advocates one method after having tried two or three others. And yet this patient's favorite method will not succeed with another patient. There must be some explanation for the undeniable fact that a given method will help one patient but not another.

I have watched the peculiar behavior of this disease for years, and I have come to the conclusion that there are probably four, or possibly five, factors that determine the response to treatment in a given case, and that within limits it is not so much the agent employed, as the manner in which it is used. One factor to be considered is the species, or possibly the strain, of the infecting organism; although this in part may determine the response to treatment, I doubt that it is of considerable practical importance. The second factor is hypersensitiveness, which may develop in infections with epidermophyton and which is of great practical significance because in this type of case, which has all the characteristics of eczema, the more irritating antiseptics are poorly borne; it is in these cases, particularly, that mild astringent lotions and mixtures are useful. With subsidence of the acute irritative phenomena, the skin frequently resumes its normal appearance. The third factor is dryness. It is well known that the organism thrives in warm, moist places and that the infection is more active in the summer months, in the warmer climates, and in patients with a hyperidrotic skin. Every effort should be made, therefore, to keep the skin of the affected regions, usually the feet, as dry as possible. The skin should be carefully dried after the patient has bathed; a dusting powder should be used frequently, and any tendency to hyperidrosis should be counteracted, if necessary, with proper doses of Roentgen rays. Probably the beneficial effect of many of the popular preparations is, at least in part, dependent on their drying effect. The fourth factor is exfoliation. It is difficult to escape the conviction, in given cases, that it

is not the antiseptic effect of the preparation, but the repeated exfoliation which finally makes the habitat unfavorable to the infecting organism. Such exfoliation, of course, results from a number of the methods in vogue. The fifth factor is the patient's general health. The importance of this is rather problematic. But it is not unusual to see the eruption improve with improvement in the patient's general health. An indoor, sedentary worker may be much benefited by outdoor exercise, and attention to other hygienic measures, such as proper diet for possible constipation.

Probably as important as the actual treatment in a case is prophylaxis, both individual and general. There is little doubt that difficulty over a period of years is as often due to reinfection as it is to relapse. The stockings and shoes are often the medium of reinfection. A daily change to clean stockings should be advised. Three or four pairs of shoes should be in use so that a given pair need not be worn oftener than one day in three or four. Shoes which are not in use should be exposed to sunlight frequently, or if this is impossible, the insides of them should be sprinkled with an antiseptic dusting powder and the shoes kept in a dry place. Those who frequent public bathing establishments may find some protection in the use of sandals, or canvas or rubber shoes. The disease has become a problem of public health not of a major type, because in most instances it is not especially disabling. Not uncommonly, however, it totally incapacitates for weeks and even months. Although no drastic legislation may be necessary, dissemination of information regarding the habits of the organism is desirable, in order that the bathrooms and swimming pools of hotels, clubs, gymnasiums, and so forth, may be cared for in a more hygienic manner. It is likely that daily wiping of the floors, bath tubs, wash basins, and so forth, with solution of crude phenol, five per cent, would do much to prevent the spread of the infection. The practice of one person wearing another's athletic equipment, such as trunks, socks or shoes, not uncommon among athletes should be interdicted.

CARDIAC NEUROSES*

BY THOMAS ZISKIN, M.D.

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The statement has been made that people who complain of heart trouble do not have heart disease, and that those who have heart disease do not complain of heart trouble. While the truth of this statement may be somewhat exaggerated, it serves its purpose to bring home the point that practically all the symptoms that are due to heart disease may be caused by other conditions than heart disease. Over fifty per cent of the patients who consult a cardiologist or visit cardiac clinics do not have any organic disease of the heart but are suffering from cardiac neuroses.

The neuroses are therefore the most common types of heart trouble encountered. They are also the least understood of the heart conditions and are usually misdiagnosed and treated with unsatisfactory results. They are, however, the types that are most amenable to treatment when properly managed.

The class of cases usually considered under the neuroses may be divided into three groups.

1. Neuroses without organic heart disease.
2. Neuroses associated with organic heart disease.
3. Effort syndrome or neurocirculatory asthenia.

The neuroses without organic disease may be divided again according to the psychic factor which brings on the symptoms. A patient may discover an irregularity of the pulse or may experience a sudden pain in the region of the heart or a palpitation of the heart and, not understanding the meaning of these symptoms, he will usually attribute them to heart disease, and develop a train of symptoms associated with heart disease.

A man may be rejected by an insurance company because of a heart murmur or an irregularity, or his physician may tell him during an examination that there is a heart murmur present or that his blood pressure is a little too high and consequently an anxiety neurosis is developed with all the symptoms of heart disease.

Emotional disturbances such as business worries, domestic difficulties, prolonged anxiety or deep grief—may bring on anxiety neuroses with regard to the heart. The sudden death from heart disease of some friend or relative may in

certain individuals bring on a cardiac neurosis.

There is usually present an hereditary neurotic type of constitution as a predisposing factor in all these cases. Both sexes are equally affected and the condition occurs at all ages beyond early childhood but most commonly in young adults and women at the menopause.

The symptoms are those of heart disease. Tachycardia, pain in the precordium, fatigue, breathlessness on slight effort, syncope and increased sweating are most frequently complained of. In addition, there may be a heightened consciousness of the heart action and position aversion. The patient will complain that he cannot sleep in a certain position as lying in this position will bring on heart symptoms or consciousness of the heart action. The pain in these cases is not like the pain of angina pectoris. It is a short, sharp, lancinating pain and does not last for any length of time. There is no radiation to the arms. There are some cases, however, in which the pain may simulate the pain of a true angina, and these usually tax the skill of the examiner in determining whether he is dealing with a true angina or not. The dyspnea, also, is not typical of the true cardiac dyspnea. It may be brought on as a result of emotion rather than effort.

The physical examination is usually negative. There may be a tachycardia and at times a bradycardia present. The heart action is forceful and there may be pulsations in the vessels of neck, epigastrium and extremities. There may be evidence of vasomotor disturbances such as cool, moist and cyanotic extremities. The roentgen ray and electrocardiographic examinations are negative.

A few case histories may be cited to bring out these points.

1.—E. J., age 32. Worked as a driver for the American Express Company up to his recent illness. He went to see his doctor because of headaches and eye trouble. During the examination, he noticed that the doctor was spending considerable time in listening to his heart and then called in two other doctors who occupied the same suite with him to listen to his heart also. After the examination was completed, the doctor told him that he found a heart murmur and that this was due to some trouble in his heart. He was given a prescription for some digitalis and advised to restrict his activities. When I saw him a year later, he complained of precordial pain, shortness of breath, weakness, dizziness and

*Read before the Hennepin County Medical Society, March 19, 1930.

insomnia. He had to give up his job because he could not stand the work any more.

Physical examination revealed nothing abnormal except a functional systolic murmur. The pulse was rapid and his hands and feet were cold and clammy. He was assured that there was nothing originally wrong with his heart. The mechanism of his symptoms was explained to him and he was advised that he could gradually regain his strength and that he would be able to return to his work.

2.—H. H., age 32. States that he has been bothered with fear of sudden death for several years. He is afraid to go anywhere alone unless he is very familiar with the surroundings. He is afraid to go into tall buildings excepting physicians' buildings, where he knows he could get instant relief if anything should happen to him. He is afraid of crowds, and he will not walk by an undertaker's parlor if it can be avoided in any way. This trouble began during the World War while he was in the military service. In the fall of 1918, he had an attack of influenza and this left him with a slow pulse. He could feel his heart thump and he was short of breath and would tire very easily. He went home on a furlough and while he was at home he consulted his family physician who told him that he had heart trouble and advised him to go to bed. During his stay at home, an uncle of his dropped dead from heart trouble while sitting in a theater. Since his return to civil life he has been able to do only the lightest kind of work because of the fact that his heart bothers him and the fear that he may drop dead if he should ever exert himself.

The physical examination is negative, excepting for a constitutional physical inferiority. There is no evidence of any organic heart disease. The neurological examination is negative.

Patients with organic heart disease may also have an associated neurosis, especially those individuals with unstable nervous systems. They usually present symptoms not in keeping with the physical findings. When the physical signs are marked, it is not so difficult to differentiate whether the symptoms are due to the disease or to the neurosis. In the well compensated cases, however, the problem is more complex and the ingenuity of the examiner is frequently taxed to determine whether the symptoms are due to the organic disease or the neurosis.

The diagnosis is made by the lack of proportion between the symptoms and the objective signs. The symptoms are induced by emotions rather than by exertion, and improvement or regression is coincident with varying emotional states rather than with the amount of physical activity. These patients also react differently to treatment. The individual with organic disease usually will resist restriction of activity, while the one with a complicating neurosis will welcome a restriction of activity and will resist any effort to increase his work.

It is always important, therefore, to consider

the mental makeup of the patient with heart disease, for an improper interpretation of symptoms in a neurotic person may lead to a mental reaction to the lesion far worse than the lesion itself.

The following case is cited to illustrate this type of neurosis:

Mrs. B., age 30, married and has two children. Has had an organic heart lesion since childhood. She has been short of breath recently and her heart has been rapid and pounding. This has worried her and she believed that her heart was failing. Yesterday, she had several fainting spells and her family became very much alarmed and she was rushed to the hospital. I saw her in consultation with her doctor and found her lying in bed, propped up with pillows. She was breathing rapidly and shallow. Her pulse was rapid and slightly irregular. Her husband and her mother were at her side, both expecting that the end was only a matter of moments. The history given was as follows: During childhood, she had scarlet fever and was left with a valvular heart lesion. Her parents were told that she must be reared very carefully. All games and exercises were forbidden. She was watched at every step and told that she must not do this and must not do that for fear that she might unduly strain her heart or possibly drop dead. Nevertheless, she grew to womanhood and was married and had two children. During the last few months, she has been under considerable nervous strain as the children had become very unruly and difficult to manage. The result was this nervous reaction with the complicating hysteria. This she believed was due to her heart condition and was a sign of failure of her heart.

Upon examination, I found the presence of a mitral lesion but no evidence of any decompensation. There were no signs that could account for the grave symptoms which she complained of. The patient and her family were assured that her symptoms were mainly of nervous origin and that she was not at death's door. The family was advised to remove her from the hospital environment and to send her to the country to rest and recuperate. Under this regime she recovered quickly and soon returned to her home and family.

EFFORT SYNDROME

The signs and symptoms of effort syndrome appear in healthy individuals only after vigorous exercise. In another class of individuals they occur after mild exertion. Such persons usually choose light occupations which require very little effort. When they indulge in more strenuous work, they develop effort syndrome in such pronounced form as to suggest cardiac disease. Such was the case during the war when this type of men were thrown into the ranks and required to do work of the average soldier. They did not withstand the strain and broke down with symptoms simulating heart disease. It is for this reason that so many of these cases were discovered during the war service.

The difference in symptoms between health and this form of ill health is entirely a matter of degree. The gauge in the amount of work which is performed in a given time will produce symptoms. The smaller the amount of work required the more severe the disease.

The term effort syndrome is usually applied to those primary cases in which there is no discernible cause of the syndrome and in which there is generally an hereditary constitutional inferiority usually called neurocirculatory asthenia. There is also a group of cases in which effort syndrome may be present but in which the symptoms are usually secondary to some other condition, such as thyroid disease, early tuberculosis, valvular heart disease, acute infections and diseases associated with disturbances of the alkali reserve of the blood or oxygen deficiency. It is important, therefore, to rule out these conditions before a diagnosis of primary neurocirculatory asthenia is made.

The symptoms are the same as those of anxiety neurosis together with those of vasomotor disturbance. Shortness of breath, pains in the chest, fatigue, dizziness, palpitation and syncope are most commonly found. The extremities are cold and clammy and the skin is cyanotic. The pulse is usually rapid and the apex beat is forceful.

Physical examination does not reveal any signs of heart disease. The X-ray examination shows a small, asthenic type of heart. There may be general visceroptosis present also. The electrocardiogram is negative but may show signs of an irritable heart.

The following case is cited:

E. C. B., age 40. Had usual childhood diseases. Worked as a waiter before entering the army and got along quite well. During his military service, he found that he could not keep up with the rest of the men and many times during drill he would have to drop out because he would tire, become short of breath and his heart would palpitate. He believed that he had a weak heart. Since his return to civil life he has been unable to do anything because his heart bothered him. At present he states that he is very easily fatigued. If he tries to do a day's work, he is all in the next day. He is very nervous and can't sleep. His heart pounds and he is very short of breath.

On examination the man is found to be constitutionally inferior. His weight is 101 pounds, height is 65 inches. His hands and feet are cold and cyanotic. The general physical examination is negative. The heart tones are normal. The pulse is rapid. The blood pressure is 100 systolic and 70 diastolic. X-ray examination shows a small heart, asthenic or drop type. There is also a general visceroptosis involving all the organs.

TREATMENT

The treatment of the neuroses yields very satisfying results when properly administered. In fact, more can be done for this type of cases than for other forms of heart disease. However, there is no class of cases that is more often mistreated than the cardiac neuroses. Both prophylactic and direct treatment are necessary in the management of these patients. The prophylactic treatment should begin with the education of the general public regarding heart disease. The mention of the term heart disease brings to the mind of the majority the picture of an incurable individual, one who is likely to drop dead suddenly, one for whom nothing can be done and one who must lead an invalid's life continuously. The reports in the newspapers attributing every sudden death to heart disease, when as a matter of fact very few are actually due to heart disease, only tend to strengthen the belief of the public in this misconception regarding heart disease.

Next, we must recognize these types of neurotic individuals when they come to us for examination and treatment. Tact must be used in dealing with them and nothing should be said or done which would tend to make them apprehensive regarding their condition. The direct treatment should begin with a thorough physical examination. This should include X-ray and electrocardiographic examinations. A thorough search should be made for other conditions which may be responsible for the symptoms. If no organic disease is found the patient should be acquainted with the facts and the cause of his symptoms explained to him. He should not be told that there is nothing the matter with him and that his symptoms are imaginary. He will resent this and lose confidence in your ability to help him. Psychogenic treatment is of the greatest importance and at times it becomes necessary to call in a psychiatrist to assist you in treating the patient. Exercise is essential in the treatment. It should be mild to start with and gradually increased. Drugs should be avoided as much as possible, especially drugs used in the treatment of heart disease such as digitalis. The less medicine used the more will the patient be encouraged regarding his condition. It is also wise to permit the use of tea, coffee and tobacco when not used excessively and if they are not aggravating the symptoms.

If the regime of treatment is carried out, encouraging results will be obtained and the majority of these patients will be returned to normal health in a short period of time.

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THE NORTH AND SOUTH DAKOTA STATE MEDICAL SOCIETY MEETINGS

We take great pleasure in announcing to our readers that both the North Dakota and South Dakota State Medical Society meetings will take place in the month of May, the South Dakota meeting to be held at Sioux Falls on May 20, 21, and 22, and the North Dakota meeting to be held in Bismarck on May 27 and 28.

As the JOURNAL-LANCET is the official organ of both of these state organizations, we expect to print a large number of the papers read before the two societies in the course of time, and some shortly after the meetings. Representatives of the The JOURNAL-LANCET plan to be present at each meeting. Fortunately, the two meetings are held at such dates that there is sufficient time for members of either to attend the other society's meeting if they so desire. Another fortunate thing is that there is not much medical business going on just now, from what we can gather, in either the city or the state so that will not hinder the men who want to go from here to either Bismarck or Sioux Falls to attend a meeting, and we hope the two meetings will draw a large attendance from all parts of the country, and particularly from the adjoining states of Minnesota and Montana, as well as the

representative medical centers of other states.

A little later on Minnesota will have a meeting of its own, the meeting of the Minnesota State Medical Association, and the notice will be given of that in a later issue. The entire object of this editorial is to call attention to the excellence of both the North and South Dakota meetings, and the editor can testify that he has always found the meetings of both societies intensely interesting as he has frequently been in attendance, and it seemed to him that the men in charge of the meetings were always very interested in what they were doing—good fellows in every sense of the word—and much very interesting material was presented.

CHANGES IN MEDICINE

Edward E. Filene has written an article appearing in *The Survey Graphic* on "The Merchant Looks at Medicine," and he evidently knows something of what he is talking about but not quite enough. For instance, he says: "The science of healing has made tremendous strides lately, but the business of healing has been lagging woefully behind. Doctors," he goes on to say, "are not receiving anything like sufficient pay for their services generally, and the public is paying altogether too much for services which it gets. Readers who have studied our business system will recognize that these two ailments very commonly go together. The high-priced industries, as a rule, are the unprofitable industries. In the motor car industry, for example, where attention is paid to bringing down the price the greatest profits are realized." Mr. Filene calls attention to a few very important things. First, he calls the attention of the medical profession to a few discoveries the business men have made to see if they cannot be made to apply to the business of medicine. This will not satisfy all doctors, because the average doctor goes into medicine as a professional man, not as a business man. He doesn't go into the work to make a big living out of it, because that is generally impossible. These men who go into medicine do not necessarily advance the science of healing much but they should advance the business of healing—yet, when one comes to think of it, how many professional men turn around and try to make it evident that they are attempting to make a living out of medicine? The majority of them would not.

If some man charges five to ten dollars for a call in the city, the man in the country is satis-

fied if he gets two or three dollars for a call, and yet the latter is doing just as much good as his city brother. The man who wrote the article we have been quoting from advances the theory that we cannot depend upon general practitioners because it is impossible that anyone could practice or have all the knowledge which the medical profession throughout the world has brought to light. "The physician's function today must be less and less a matter of applying his superior wisdom to the patient, and more and more a matter of placing at the patient's service the knowledge and skill of the whole profession," declares Mr. Filene, and, further, "No layman needs to apologize for declaring that doctors do not know how to practice medicine. For the doctors themselves are constantly saying this, by calling each other frauds. It is an everyday experience for the sick to be told by each successive diagnostician that all other diagnoses were utterly wrong." These statements the editor disagrees with entirely. The doctors may not be able to collect the fees that are due them, but that does not necessarily mean they do not know how to practice medicine. The doctor may have to carry his accounts over long and discount them heavily to meet the patient's so-called ability to pay when as a matter of fact the average patient is quite able to pay a reasonable fee, but that is no more the fault of the doctor than of the patient who is willing to take advantage of the doctor. As for the doctors constantly calling one another frauds, that is not true at all. It occurs frequently enough, of course, but it is not generally applicable, and it is not a very good thing to bring into print because there is plenty of evidence that doctors live in amity with one another and without calling one another cheats or frauds or anything of the sort. The doctors are underpaid generally by the people who attempt to class them as fraudulent, as a matter of fact.

The men who are grouped together in a clinic have a good system under which they can work to mutual advantage and they get their share of the practice just as all the rest of us do. But the people have a different idea of medicine than they used to have. They look upon the doctor as a queer creature and hardly belonging to a profession. They do not realize that the cost of sickness is one of the most terrific drains we have today. Mr. Filene says "Everybody knows of lives which could have been saved if the patient had been able to consult an organized medical profession instead of having to shop around with guidance among innumerable doctors."

This, too, the editor can hardly agree with.

The greatest problem facing the doctors now is the re-establishment of the old fashioned practitioner, the man who knows enough to practice medicine and do what is necessary for the sick patient instead of confining himself to one organ of the body as a specialty. The editor was very much amused one day by one of his friends who, when questioned as to what he was doing now, replied that he was in a specialty and that he made a specialty of treating the pupil of the left eye only! Of course he made this statement purely in jest, but specializing has become so prevalent that the average patient may find himself forced to consult several doctors in the course of his illness, instead of one or possibly two, as formerly. In view of all this, we feel that the old practitioner is bound to return because some day the top field of medicine will waver and topple over. If one was to size up the practice of medicine today, whether here or elsewhere, one would find that it had deteriorated woefully, in spite of increased laboratory and research facilities. Men who used to be busy practitioners are doing less than they ever did before. This may be due in part to the fact that many people have lost their money and therefore are unable to indulge in very much medical advice.

If Mr. Filene had canvassed the doctors he would have found that no one in the medical profession would decline to assist a poor sick person or even a rich sick person for lack of a fee, for the simple reason that he is in the practice of medicine, he enjoys it and enjoys the thrill of a recovery in a patient. The medical profession is hard worked, and it is plainly evident that it has nobly spread the principles of hygiene, and that, anyone may know, is not a very paying proposition.

No one has as yet found a solution for general practice, but Mr. Filene advises that all doctors get together on a common basis and try to practice medicine so that people can stand it and later they will get their reward! There is a certain amount of organization that might take place in the profession, such as clinics, thus enabling the patient to get all possible benefit from repeated examinations by competent practitioners. The only objection to that is that a great many people would immediately start the rumor that here was a money-making scheme, when, if they did but know, they would realize there is little money to be made in it, whereas the man who goes out and practices as a quack and charges a good fee usually gets away with it—

just how he manages it the editor cannot understand.

Another fact is that the poor sick go to dispensaries and clinics for free treatment and advice and they usually get it. Not infrequently these dispensaries take in a great many people who are able to pay and the editor thinks he is making no mistake in that statement. "The healing business, in other words, is defrauded of any workable economic check upon its activities" in the opinion of Mr. Filene.

Hospitals are too frequently criticized for enormous charges, and we think much of this criticism can be easily overcome if those who make statements would go around and find out how the hospitals take care of the patients and what they do for them. In most of the cases their business is very much like our outside business. They take in patients and are obliged to treat them and care for them and they hope to get their fee for it, but in a number of instances there is no fee available. So all this criticism of doctors and hospitals is uncalled for, and the man who is trying to establish the practice of medicine as a business may think he is doing a great thing for the doctors but perhaps the doctors have done more for him and his fellowmen than he ever can do for them. The article referred to speaks very highly of the organized clinics of ten or fifteen members, and it rather intimates that it is a good way to make things pay, but the editor feels that if he would talk with some men in an established clinic he would be told something entirely different. This, of course, does not have any reference to the enormous clinic which the Mayo Brothers have maintained for so many years; they not only charge large fees when it is possible but they treat poor patients for nothing, just as doctors do in the country and in the community hospitals. "The principle of serving the greatest number at the lowest cost must be given first attention. The doctor, then, who wishes to give maximum service will exercise preventative measures, and organize his resources (and his prices) so that numerous people will consult him regularly for the specific purpose of keeping themselves in good running order. When doctors generally get that idea competition will do the rest." And, the editor adds, perhaps!

Mr. Filene feels that it will compel combinations and the merging of resources and a constant searching for better methods of giving greater values for the price. We hear occasionally of a man who charges a thousand dollars

for setting an arm that has been broken; such a man must feel pretty sure of his ground and it is quite safe to say that few men would charge that amount for such a case. Yet we are constantly giving advice to those who really need it without any idea as to what, if any, compensation we will receive.

MISCELLANY

TRANSACTIONS OF THE MINNEAPOLIS SURGICAL SOCIETY

Stated meeting held May 1, 1930

The president, Dr. S. R. Maxeiner, presiding

The Minneapolis Surgical Society met Thursday evening, May 1, at the home of the president, Dr. S. R. Maxeiner, 5122 Garfield Ave. S.

The Society offers two prizes each year for the best thesis on the subject of clinical surgery. The essays this year were of an unusually high standard and quality and the competition was more keen than ever.

The essay winning first prize was written by Mr. Charles Rea, a senior at the University of Minnesota Medical School on the subject of "Malignancy of the Undescended Testicle." This showed a large amount of original research work combined with a most complete and thorough resume of the literature on this subject and was a most reliable contribution to the profession.

The second prize was won by Dr. Evelyn G. McLane, of Sleepy Eye, Minnesota. Dr. McLane made a complete resume of all goiter cases which had been operated on at the New Asbury Hospital during the past five years. This brought out many very interesting facts and showed that the mortality rate at one of the best private hospitals was equal to that of the best clinics in the country.

The retiring president, Dr. S. R. Maxeiner, gave the address of the evening. This was on "Constructive Criticism for the Society." The work of the year was reviewed generally and plans outlined for the coming year.

Following the scientific meeting Dr. A. T. Mann, the new president, was escorted to the chair and conducted a brief business meeting.

The meeting adjourned until October, 1930.

NEWS ITEMS

Forty nurses were graduated this month from the Mound-Midway Hospital School of Nursing, St. Paul, Minn.

Dr. J. F. McCoy, who has been located in Minneapolis for several years, is now located at Motley, Minn.

Dr. John M. Ekrem, who has practiced at Gully, Minn., for many years, died recently at the age of 64 years.

Dr. L. J. Bowman, Glyndon, Minn., has moved to Hope, N. D., where he has opened offices for general practice.

Miss Emma Lach, Fairview Hospital, Minneapolis, Minn., has been named superintendent of the city hospital at Owatonna, Minn.

Dr. H. G. Woutat, Grand Forks, was the principal speaker at the April meeting of the Grand Forks District Medical Society.

Dr. Samuel Schaefer, one of the pioneer physicians of Winona, Minn., has been elected head of the city council for the coming year.

Dr. O. Lenz, formerly located at Aberdeen, S. D., has moved to Hutchinson, Minn., where he has opened offices for general practice.

The Minnesota Supreme Court affirmed the verdict of \$7,500 against Dr. J. F. DuBois, Sauk Center, as a result of a malpractice suit.

Dr. Herbert B. Bailey, Ceylon, Minn., has been appointed an assistant surgeon to cover the territory of the C. & N. W. Railway Co. in that section.

Bethesda Hospital is to be entirely rebuilt at its present location, Ninth and Wacouta Streets, St. Paul. \$650,000 will be invested in the new buildings.

Medical books have been contributed to the student library of the University of Minnesota by Jesse F. McClendon, Ph.D. They are valued at over \$1,000.

Dr. T. C. Kreuzer, who has been located for several years at Austin, Minn., has moved to Winona, Minn., where he has formed a partnership with Dr. E. D. Risser.

Dr. Leroy E. Angel, Montrose, S. D., aged 45 years, was killed recently in an automobile accident. He was a graduate of the Northwestern University School, Chicago.

Cannon Falls, Minn., has added 80 rooms to its Sanatorium that cares for patients who are tubercular. This addition cost \$150,000 and is three stories, all modern and fireproof.

Dr. Jay Davis, associate of Dr. W. E. List, Supt., in the department of medicine, Minneapolis General Hospital, has been awarded the National Research Council fellowship for 1930-1931.

Dr. Eivind Klaveness, St. Paul, Minn., has filed as a candidate for governor of Minnesota. Dr. Klaveness has been located at Monticello,

Minn., for several years, but recently moved to St. Paul.

The Minneapolis General Hospital offers a six months technician's course covering the electrocardiograph and medical photography. Anyone interested can address or call on Dr. W. E. List, Supt., Minneapolis, for full information.

Dr. Charles W. Watson, Minneapolis, died this month at his residence at the age of 63 years. Dr. Watson had retired from active practice during the past few years. He was a graduate of the Hamline, Minn., Medical School.

Heart disease is the most important and single cause of death in Minnesota, according to figures compiled by the State Board of Health, over a four year period, 1924 to 1928. Heart disease accounted for 16.14 per cent of the deaths in the period.

Dr. and Mrs. E. M. Stansbury, Vermillion, S. D., are taking a two months European trip. The tour will comprise part of an educational program being made of a group of surgeons from eastern cities, of which Dr. Stansbury is an active member.

At the regular monthly meeting of the Watertown, S. D., Medical Society last month, Dr. R. L. Kennedy, of the Mayo Clinic, presented a paper on the various phases and treatment of splenomegalia. He illustrated his subject by the use of lantern slides.

A joint meeting of the Aberdeen Medical and Dental Societies was held in that city on Saturday, April 26. Dr. Henry B. Clark, St. Paul, Dr. W. H. Von Lackum, Rochester, Dr. L. T. Austin, Rochester, and Dr. J. D. Alway, Aberdeen, were the principal speakers.

Paul H. Fesler, superintendent of the University hospital; Dr. W. A. O'Brien, associate professor of pathology, and Dr. J. C. Litzenberg, head of the department of gynecology and obstetrics, University of Minnesota, attended a county medical society meeting at Willmar, Minn., last month.

The regular monthly meeting of the Sioux Falls District Medical Society was held at Sioux Falls on the evening of May 13. The speakers were E. W. Jones, M.D., of Mitchell, S. D., and C. F. Franke, Ph.D., State Chemist, South Dakota State College. Dr. Jones spoke on "Massive Pulmonary Collapse" and Dr. Franke spoke on "Malnutrition and Nutrition Studies due to Diet." His work was recently shown to several

of the doctors in the Society who were so enthused about it that they asked for the presentation of his work to the Society.

At the regular meeting of the Northwest District Medical Society held at St. Joseph's Hospital, Minot, N. D., twenty-six members and three guests were present. "Diseases of the Eye" was the subject under discussion, led by Dr. O'Reilley. Discussion as to the advisability of conducting a preschool age clinic brought from a dozen of the members voluntary offers to take active part. Consideration was also given to the question of providing a free public health clinic at the fair grounds during its progress, but definite action thereon was postponed until next meeting that further information might meantime be obtained.

The 1930 program of the American Association for the Study of Goiter, July 10 and 11 at Seattle, Wash., and July 12 at Tacoma, Wash., has thirty-two contributors from Vancouver and Winnipeg on the north, and including three from the Mayo Clinic, Boston, and Charlotte, N. C., in the east, and many well known specialists on the subject from central and southwestern cities, covering the disease and its relations to other physical ailments. A trip to Mount Ranier on the afternoon of the twelfth is an inviting feature of the program as well. Dr. J. Tate Mason, of Seattle, chairman of the program committee is to be congratulated upon his success in securing promises from so many noted specialists to take part in a program richly varied in its relations to the disease and its treatment.

The spring meeting of the Yankton District Medical Society was held at Vermillion, S. D. Dinner was served at the 'Varsity. This dinner was sponsored by the Ladies Auxiliary of Yankton District Medical Society in accordance with advance notice sent to the wives of the membership by the tentative officers of this organization. A permanent organization of this Auxiliary was effected after the dinner. Minutes of the previous meeting were read and approved. The proposed amendment to create an associate membership, which had been laid upon the table at the previous meeting, was read. Upon motion to adopt the amendment, which was seconded, it was adopted by a majority vote of the Society. There being no further business the scientific program was then taken up. Owing to illness, Dr. Hilding Berglund, Minneapolis, was unable to be present, and his place was taken

by Dr. Frederick E. B. Foley, of St. Paul, who presented a masterly paper with lantern slides upon the subject of "Diagnosis and Surgical Treatment of Ureteropelvic Junction Obstructions." The next paper was "Modern Methods Used in Teaching the Physiological Action of Drugs," by Dr. H. V. Atkinson, Professor of Physiology, Vermillion, S. D. Dr. Greenfield, of Avon, S. D., a visitor, was then introduced. He gave an extensive report of his thirty day observation of a new cancer cure by Drs. Coffey and Dunbar, of San Francisco. His report of results obtained from the administration of a serum by these physicians was most amazing.

PROGRAM OF THE MEETING OF THE
NORTH DAKOTA MEDICAL
ASSOCIATION

Bismarck, May 27 and 28, 1930

Forenoon, May 27

- 8:30- 9:00 A. M.—"Address of Welcome." Mayor A. P. Lenhart, Bismarck.
- 9:00- 9:30 A. M.—"A Study of Maternal Mortality." A. A. Whittemore, M.D., State Health Officer, Bismarck.
- 9:30-10:00 A. M.—"The Treatment of the Nausea and Vomiting of Pregnancy." John H. Moore, M.D., Grand Forks.
Discussion of Papers of Drs. Whittemore and Moore by E. M. Ransom, M.D., Minot.
- 10:00-10:30 A. M.—"Epidemic Cerebrospinal Meningitis." Diagnosis and Treatment. W. E. Lancaster, M.D., Fargo.
Discussion opened by H. A. Brandes, M.D., Bismarck.
- 10:30-11:00 A. M.—"Pain as a Factor in Nervous Diseases." Arthur S. Hamilton, M.D., Minneapolis.
Discussion opened by J. D. Carr, M.D., Jamestown.
- 11:00-11:30 A. M.—"Some Observations on Diseases of the Thyroid Gland." James Tate Mason, M.D., Seattle.
Discussion opened by H. H. Healy, M.D., Grand Forks.
- 11:30 A. M. —"The Occurrence of Some Diseases in Relation to Age Groups." F. C. Rodda, M.D., Minneapolis.
Discussion opened by R. B. Radl, M.D., Dickinson.

Afternoon, May 27

- 1:30- 2:00 P. M.—"President's Address." John Crawford, M.D., New Rockford.
- 2:00- 3:00 P. M.—Clinic—"Nervous and Mental Diseases." Arthur S. Hamilton, M.D., Minneapolis.
- 3:00- 4:00 P. M.—Clinic—"Pediatrics." F. C. Rodda, M.D., Minneapolis.

- 4:00- 4:30 P. M.—“Basic Science.” Report of Action of State Committee. G. M. Williamson, M.D., Chairman, Grand Forks.
- 5:00 P. M. —“Military Review at Fort Lincoln.” Transportation will be provided. Cars will leave Masonic Temple at 4:40 P. M.
- 7:00 P. M. —“Annual Banquet.” Patterson Hall. Toastmaster: B. S. Nickerson, M. D.; Address: Gov. George Shafer. Entertainment.
- Forenoon, May 28**
- 9:00- 9:30 A. M.—“Duodenal Diverticula.” Russell Gates, M.D., Minot. Discussion opened by P. H. Burton, M.D., Fargo.
- 9:30-10:00 A. M.—“Significance of Temporary Blindness.” W. L. Benedict, M.D., Rochester. Discussion opened by Archie D. McCannell, M.D., Minot.
- 10:00-10:30 A. M.—“The Patient’s Outlook in Hypertension.” H. O. Altnow, M.D., Minneapolis. Discussion by F. O. Woodward, M.D., Jamestown, and W. H. Bodenstab, M.D., Bismarck.
- 10:30-11:00 A. M.—“Thymic Disorders.” Their Recognition and Treatment—With Report of Sixteen Cases. Ralph E. Pray, M.D., Fargo. Discussion opened by H. E. French, M.D., Grand Forks.
- 11:00-12:00 A. M.—“Diagnosis and Treatment of Infections of the Hand.” With Film Demonstration. E. P. Quain, M. D., Bismarck.

Afternoon, May 28

- 1:30- 2:00 P. M.—“Installation of President for 1930 to 1931.
- 2:00- 3:00 P. M.—“Treatment of Fractures.” General Discussion of Fundamentals and Reports of Cases. Archa E. Wilcox, M.D., Minneapolis.
- 3:00- 4:00 P. M.—“Collapse Therapy of the Lung.” T. J. Kinsella, M.D., Glen Lake Sanatorium, Minneapolis.

To be followed by Clinic on Tuberculosis.

CLASSIFIED ADVERTISEMENTS

Location Wanted

By general practitioner with hospital experience. Competent, no bad habits. Address 715, care of this office.

Opportunity for Young Physician

Old established practice in Eastern South Dakota may be taken over for fraction of cost of equipment. Thorough introduction and many appointments to be transferred. Practice ran over \$9,000.00 last year, all collected. Some cash desirable, terms for part if necessary. Excellent location. Must act promptly. Address 719, care of this office.

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Position in doctor’s office by young woman with two years nurses training. Now employed in doctor’s office. References. Moderate salary. Address 712, care of this office.

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Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

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Minnesota, unopposed. South Dakota, Iowa. Positions wanted, Roentgenologist and electrotherapist, experienced. Surgical assistant, associated or resident. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

Wanted

A young, single, Catholic physician to assist, with view of partnership, in a well established practice with hospital facilities, in Southern Minnesota. An exceptional opportunity for the right man. Give references in first letter. Address 717, care of this office.

For Sale

200 volumes of medical books, like new, including Nelson’s Encyclopedia. Everything physicians need in surgical instruments for general practice. If interested write to Grace G. Berkness, Administrator, Estate of Dr. Walter G. McMurtry, Wolford, North Dakota.

Practice for Sale

Will sell my \$5,000 to \$8,000 medical and surgical practice, including \$7,500 combined office and residence for \$6,000, part cash. Located in central South Dakota, town of 800. One congenial competitor. Hospital facilities in town. Address 711, care of this office.

Technician Wants Location

Technician wants X-ray and Laboratory position. Competent young lady with three years experience in X-ray and laboratory work desires position. Competent young lady with three years experience in X-ray and laboratory work desires position in doctor’s office or community hospital, in Minnesota, North or South Dakota. Two years nurses training. Some knowledge of physical therapy. Best references. Address 718, care of this office.

THE JOURNAL-~~L~~ANCET

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TULAREMIA IN WILD LIFE AND ITS TRANSMISSION TO MAN*

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MINNEAPOLIS, MINNESOTA

Tularemia^{1, 2, 3, 4} is a highly contagious disease of wild life, readily transmissible to man. As a disease in man it does not appear to be highly communicable from one human to another. With one exception, all human cases of this disease appear to have been derived from infected animals or intermediate insect hosts. From these sources *Bacterium tularensis* is highly infectious for humans, as has been well demonstrated by the morbidity among laboratory workers handling infected animals. In marked contrast is the paucity of known infections from human origin, in spite of the fact that infected patients are often cared for in the home, with untrained individuals dressing the discharging lesions.

The usual infection by *Bacterium tularensis* in man is a very typical and recognizable infection. While laboratory isolation of the organism or an agglutination test is necessary for a proven diagnosis, most human infections may be easily recognized by the typical course of the disease and a careful history of direct or indirect contact with animals or certain biting insects.

The usual course of tularemia in man exhibits

two distinct developments of the infection. The first is an acute illness with sudden onset, chills, fever, and body pains lasting from one to three weeks. The second is the development of a local ulcer at the site of primary infection, with slow progressive involvement of the proximal lymph nodes. The generalized aspect of the infection is a very acute picture; the regional aspect, essentially chronic, sometimes persists for six months or a year. If the primary inoculation with the disease occurs in the eye, the local lesion is a characteristically severe conjunctivitis^{5, 6}, with other aspects of the disease appearing typical. Departures from the typical clinical picture occur. There may be absence of any initial lesion whatsoever, but in almost all such cases a regional lymphatic involvement accompanied by acute illness is still suggestive of tularemia. Infections of tularemia have been described in which there is neither local lesion nor regional lymphatic involvement. These infections have been described by Francis⁷ as the typhoid type, and were originally observed as laboratory infections. Cases of this type described in clinical practice are rare⁴. It may be that the typhoid type of tularemia is of much more common occurrence in medical practice

*Read before the meeting of the American College of Physicians, Minneapolis, February, 1930.

than is indicated by the number of recognized cases. It would seem that hunters and housewives would be as prone to contract the laboratory type of tularemia as are laboratory workers, but not nearly so apt to arrive at a correct diagnosis. The absence of any regional involvement is suggestive of the alimentary tract as a portal of entry.

tain species which, by susceptibility, indicate a possibility of serving as a source of human cases. These facts are illustrated in graphic form on the accompanying chart.

Tularemia is sometimes referred to as "rabbit disease," indicating our appreciation of the occurrence of the disease in that species, knowledge dating from the important discoveries of Wherry⁸ in 1914. Francis⁹ has given us the best demonstration of the extensive occurrence of this disease in rabbits; and, as the origin of the greatest number of human infections, the rabbit deserves first consideration as a possible source of tularemia infection. The jack rabbit, cotton tail and snow shoe rabbit appear to be equally involved in their respective territories of distribution. From the investigations of Parker and Spencer¹⁰, it appears that the rabbit tick is the important agent of transmission of tularemia among the various rabbit species. Important as it is in this regard, this tick, fortunately, does not bite humans and is therefore not a factor in the transmission of the disease to man. Direct contact of a wound with fresh rabbit tissue is the usual method of transmission from rabbit to man. It may be that rabbits are the most common source of human infection because tularemia is typically a rabbit disease, or it may be because of the popularity of the rabbit as a game animal. Over sixty per cent of sporting ammunition is expended upon this animal. As the major vector of this disease, direct contact from rabbit to man is shown in the accompanying diagram by a broad arrow.

It is easily conceivable that certain animals feeding on rabbits might act as carriers by contamination, as has been suggested by Parker¹⁰. Thus a cat, coyote or hog, after eating of an infected rabbit carcass, might transmit the disease to man by simple mouth contamination. Known human cases from the bite of these animals are a matter of record and the above might be given as the mode of infection. However, both the cat¹¹ and the coyote¹² have been shown to develop active infections upon eating infective material, and may be considered to transmit the disease, at least on occasion, as infected rather than contaminated carriers.

Other animals known to harbor the disease and to serve as an origin of human tularemia in the United States are the muskrat^{13, 14} opossum¹⁵, and woodchuck¹⁶. Both the squirrel and the ground squirrel have apparently been the source of human cases, and the latter is the species in which the disease was discovered by McCoy¹. The water rat has been the source of

TULAREMIA



A careful history in the case of tularemia is of great value in arriving at a clinical diagnosis. Likewise, a careful history of a proven laboratory case of tularemia is of great value in developing our knowledge of this disease. In fact, much of our information and understanding of tularemia as a disease of wild life has come from ferreting out the origin of proven human infections. It is the purpose of this paper to present pertinent information concerning tularemia as a disease of wild life, naming those species of animal known to be responsible for human infections, pointing out certain species known to harbor the infection and cer-

infection in several extensive outbreaks of human tularemia in Russia¹⁷. The water rat appears to have been the greatest source of tularemia in humans in that country. However, reports of a coincident destruction of the rabbit population would indicate that that species was also afflicted with tularemia. The collecting of the water rat for fur, during an epizootic of tularemia, appears to have been the basis of the large outbreaks of human disease and is impressive in suggesting that human activities are just as important as wild life distribution in determining the occurrence of human infection.

In the United States, tularemia as a natural epizootic disease has been found in wild rats¹⁸ and meadow mice¹⁹. Indications suggest that tularemia may be as prevalent in these species as in the rabbit but that no vector has been sufficiently operative to bring to light human infections from these sources.

Sheep²⁰ have been shown by Parker to suffer from a natural infection with *Bacterium tularense*. Corresponding meat products have not been shown to be the source of human infection. However, Green and Wade²¹ have recently shown that *Bacterium tularense* is present in great concentration in the muscle tissue of a rabbit carcass dead from the disease, that the organism survives many times as long in this tissue as in the internal organs, and that at ice-box temperature, the muscle tissue is infective after four or five weeks. It does not seem impossible, then, that some careful clinician may bring into the category of food poisoning that impalpable typhoid type of tularemia which has been so consistently seen among laboratory workers.

Laboratory investigations on the susceptibility of various mammals¹⁰ to an experimental infection with tularemia indicate a number of possible sources of human infection which have not as yet been realized. The pocket gopher, the chipmunk, the deer mouse and the house mouse are susceptible to laboratory inoculation, although tularemia is not known to occur naturally in these species. The porcupine is also susceptible.

The demonstration of tularemia as a natural infection of birds greatly broadens the field of possible sources of human infection. Parker¹⁰ considered this possibility as early as 1925 and produced an experimental infection in a blue grouse. Later Parker²² reported two cases of tularemia which appeared to have obtained their infection from the bob white (quail) and also the production of fatal infection in the same species of bird by feeding infective material.

Green and Wade²³ found the ruffed grouse susceptible to experimental infection and subsequently demonstrated the natural occurrence of tularemia in birds by the discovery of the disease in a bob white dying in the wild²⁴. The status of birds as a source of human infection will bear much further investigation and clinical consideration.

Intermediate insect hosts appear to be the usual means of transfer of tularemia among wild animals. While it seems that numerous blood feeding parasites may transmit the disease, three are definitely known to be active in its transmission among wild animals, and two of these, the deer fly⁹ and the wood tick²⁵, transmit the disease to man. The importance of insect hosts in this regard appears to vary with wild life organization in different parts of the country and with the incidence of tularemia in wild life. The deer fly has played such an obvious rôle in the dissemination of tularemia that the disease was first known as "deer fly fever." It is often hard to pin the blame upon this elusive parasite, even when guilty, as his attacks are swift and numerous. The primary lesion from the bite of a deer fly is apt to be on exposed portions of the body, such as the back of the hands or back of the neck. It must be borne in mind that infection may occur from this source when a deer fly is slapped and then crushed with the finger.

At least three species of wood tick distributed over the central and western United States become infected with tularemia from animals and may transmit the disease to man. The history of a bite from a wood tick is usually accurate, as the removal of this insect is remembered. A wood tick bite may also result in an ulcer which is not caused by *Bacterium tularense*. Such a lesion can be differentiated from an ulcer of tularemia clinically as well as bacteriologically.

The source of an infection by *Bacterium tularense* may sometimes be extremely difficult to ferret out. A finger pricked on a thorn or stuck with a barbed wire may promptly develop an ulcer of tularemia at the site of the wound. If the infection cannot be traced to contact with an animal or bird carcass, careful consideration should be given to insect parasites. The swatting and crushing of a deer fly between the fingers with subsequent puncture of the skin with a thorn or barb might easily be overlooked.

These considerations show how incomplete as yet is our knowledge of tularemia. It is evident that the presence of the disease in various animals and insect parasites underlies its occur-

rence in the human. The transmission to man appears to be conditioned both by wild life organization and by human activities, and these factors appear to vary greatly in different localities. It is now becoming evident that tularemia has been present for years in regions where it has only recently been recognized. While information is as yet meagre, it seems that when all human cases of tularemia receiving medical care are recognized, the disease will appear in any region as a cyclic phenomenon depending upon periodic exacerbations of the disease in certain species of wild life.

The United States is just now entering upon a program of wild life conservation which is without parallel. Wild life refuges are being established upon a magnificent scale. It is the plan of conservationists to build up and maintain by special effort a large wild life population which of necessity must be scattered throughout areas of human habitation. That these developments carried out over a period of years will have an appreciable effect upon the occurrence of human tularemia can scarcely be doubted.

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SEQUELAE OF HEAD INJURIES

By JULIUS JOHNSON, M.D.

MINNEAPOLIS, MINNESOTA

It is a widely accepted belief that physical injury, especially to the head, is apt to be followed by aftereffects in the way of nervous, mental and somatic disturbances of various sorts. Of these, the most common are headaches, dizziness, chronic fatigue, nervousness, poor concentration for sustained effort, psychosis, epilepsy, mental deterioration, irritability, other psychoneurotic symptoms and emotional instability known as a post-traumatic constitution.

A brief survey of the literature uncovers a number of authors who find, with almost uniform unanimity, that the foregoing symptoms are commonly sequelæ of cranial injuries.

T. Crisp English, in 1904, reports on the study of 300 cases covering one to twelve years after the injury, and comes to the same conclusions.

J. Kasanin, of Judge Baker Foundation, finds that of 120 cases of constitutional inferiority, 13 gave a history of head injury, while in a control group only 2 cases had head injury. He also noted a similarity in the symptoms following cranial injury and epidemic encephalitis.

Trotter, in a large number of war injuries, found the symptoms of headache, giddiness, tinnitus, memory defect, and change in disposition. He states that "in concussion the skull undergoes great momentary change of shape and

then recovers the normal form. External examination then yields no evidence of serious changes within the skull which occurred at the moment of the accident and which may cause great damage to the brain.

"The force consists of two components; the first is transmitted through the cavity and leads to hyperacute concussion, while a part is expended as a direct blow upon the brain where the skull is struck. The brain between the direct and contrecoup concussion is liable to stress of dislocation which may cause contusion of the substance."

Carsasa reports 5 cases of fatal head injuries in which there were no fractures, and no changes in the meninges, but he found multiple minute hemorrhages in the perivascular lymph spaces seen also in epidemic encephalitis.

Pierce Bailly reports 23 cases which showed irritability, uncontrollable temper, nervousness, headaches, and conduct disorders.

Adolph Meyer reports the results of chemical and pathological studies in cases of traumatic insanity. He emphasizes the fact that whether there was a fracture or not made little difference. He also emphasized the sequelæ of extreme fatigue, retardation of the flow of thought, impaired retentive memory, irritability, headaches, extreme susceptibility to alcohol, as well as a large number of unpleasant somatic sensations.

Kasanin finds that the conduct disorders after cranial injuries do not respond to changes in environment or psychotherapy and therefore the disorders may be due to organic factors. He finds the same personality changes, that is, emotional instability, temper tantrums, egocentricity, and inability to follow a definite goal in life. It appears to him that any factor which causes a diffuse process in the central nervous system will interfere with the proper inhibiting influences and will greatly hinder the complete integration of the individual's behavior.

Redlich takes the stand that none of the emotional conditions should be considered pure neurosis, since the basis consists of microscopic changes in the brain.

In my own series I picked at random 140 cases, a large number of which were litigation cases. In the latter group one must not overlook the fact that they are litigation cases and, therefore, neurotic symptoms are prone to develop on the basis of compensation. However, as I review the symptoms and complaints they check essentially with those reported in the literature.

Out of the 140 cases there are 88 cases that are negative to neurological examination or to those symptoms usually referred to as objective findings, yet present the symptoms of headache, vertigo, vomiting, change in disposition, irritability, nervousness, inability for mental or physical exertion, disturbed sleep, and easily influenced by heat. Thirty-two cases had positive neurological findings. Twenty cases manifested mental retardation, and the balance of the group complained of the usual symptoms of psychoneurosis without the symptoms peculiar to head injury. Two cases came to autopsy several years after the injury because of hemorrhage into an old blood clot. These two cases presented the usual symptoms without any positive neurological symptoms before the recent hemorrhage caused death. Some of the cases were examined soon after the accident occurred, but a large portion were seen more than a year later.

As to the pathology, it seems likely, as Penfield suggests, that these head symptoms following trauma are caused by a common mechanism. Our conception of this mechanism remains unclarified by any definite evidence furnished by pathologic or physiologic studies. The clinical evidence suggests to us that the cause lies in disturbed circulation of the cerebrospinal fluid or blood, or both. Patients treated by repeated lumbar puncture, saline cathartics, or decompression in the form of fracture, are not so badly troubled by headaches and dizziness later. The headaches are influenced by change in position and atmospheric pressure. This fact also suggests disturbance in circulation or vasomotor control.

The pathology is considerably clarified by Temple Fay, in an article in the *Journal of the A. M. A.* of January 25, 1930, wherein he demonstrates injury to the pacchionian bodies with interference in the absorption of cerebrospinal fluid and secondary brain atrophy from pressure and anemia.

The object of this short presentation is to again reemphasize the seriousness of cerebral trauma, the common sequelæ which cannot be detected by our ordinary physical and neurological examinations though the subject may be a social misfit; that these cases should receive adequate treatment with long periods of physical and mental rest even in the mild cases, and that they must be studied in longitudinal section before final prognosis is given; also that the more recent work in encephalography as shown by Penfield, Douglas, Boyd, and Fay, be more used in diagnosis and treatment.

ILLUSTRATIVE CASES

CASE 1.—Miss P. H., age 28, single, typist, was examined February 24, 1928.

Family history was essentially negative.

She gives a past history of gastric ulcer at the age of 23, from which she recovered on diet. Appendectomy was performed in 1923, with good recovery. One year ago after an emotional upset she had spasm of the eyelids for one day, and had not slept well the past month on account of some emotional upset. Otherwise there was no special nervous condition before her accident.

History of the Accident. On February 17, 1928, the patient was injured by striking her head in an auto accident. She remembers being struck, then some minutes later found herself standing in the middle of the street six feet from the car in the act of falling, and some one came and caught her. She can also remember her head striking the post but does not remember how she got out of the car. She then became dazed again and remembers nothing until she woke up in a neighbor's house. She vomited once while in the street. After that she has remained conscious. She was taken to the hospital where she remained for six weeks. Her complaints at first were headaches, dizziness, nervousness, stiffness and soreness of neck, poor sleep, and pain in her eyes if they were turned up.

Physical and neurological examinations the following day were all negative except for the contusion on the right forehead and another on the right knee.

The patient was seen again on January 28, 1930, at which time she gave a history that she still has headaches every two weeks which start with a pain in the back of the head, and she is nauseated at times. The dizziness continued the first year after the accident, and she has drowsy spells and is very restless and irritable. She slept very little the first six or seven months and does not sleep well even at the present time. She finds it difficult to concentrate long, forgets things she is supposed to do, and has poor physical endurance.

CASE 2.—Mr. M. M., age 63 at the time of accident, carpenter, retired minister.

His family and past personal history, as stated by the patient, are negative except that he has always been hard of hearing and this has gradually increased the last year.

History of the Accident. On February 21, 1922, while working as a carpenter, he fell off a scaffolding eight or nine feet striking his head on a block. He was rendered unconscious for a few moments, then looked around and thought of going back to work, but when he noticed he could not hear with the right ear he decided not to work. He at first stood up alone but felt dull in his head and had to sit down again. He then felt that he was getting worse and noticed bleeding on the right ear and scalp. He walked to a street car and told the conductor to put him off at his street because he did not feel sure of himself. He remembers that he

got home but does not remember whether or not he was helped off the car. The next day he was taken to the hospital where he remained two weeks. X-rays of the skull were negative. He was taken home, but does not remember how. He remained home six months, after which he tried to work but found that work aggravated his headaches.

While in the hospital we noticed that he read the same paper all day and still what he read was new to him as though he had not seen it before. He then noticed that he could remember two lines but when he got to the third line he would forget the first.

Since then, when told to go to new places or to transfer on cars, he gets confused and does not know where to get the car. If told one thing he can remember it, but if told two things together he gets them mixed up. When told to do something he cannot get it fixed in his mind. Tire aggravates the confusion. At times he starts to say something and then forgets what he wanted to say. He has frequent headaches with dizziness, and hearing in the right ear is lost.

Physical examination at this time was entirely negative except for impairment of hearing. Objective neurological examination was also negative. During the examination it was noted that he had difficulty in grasping questions, and that he was confused, especially as regards recent events. He starts to say something, then stops and seems to forget what he started to say. He had trouble in grasping simple commands, like putting an object in a certain place.

This man has been seen several times in the last seven years and has complained of similar confusion. He states that his memory has been poor and that his headaches have continued, but in the last year he thinks he has been somewhat better. He states that his mind used to work like a country telephone line where the message had to go around great distances, and he had trouble connecting ideas, but lately the connection seems to be more direct.

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PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of April 9, 1930

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, April 9, 1930. Dinner was served at 7 P. M. and the meeting was called to order at 8 P. M. by the President, Dr. Emil S. Geist. There were 52 members present.

Minutes of the March meeting were read and approved; also the minutes of the Executive Committee of March 26.

Dr. C. D. Freeman read the following memorial to Dr. Paul B. Cook:

DR. PAUL B. COOK, a member of this Academy since 1911, died February 9, 1930, at Miami Beach, Florida, where he had gone to recuperate his health.

He had practiced in St. Paul since his graduation from the University of Minnesota in 1900. He was born in Rochester, Minnesota, the son of George Clinton and Elizabeth Burns Cook. He made his home with his sister, Mrs. F. B. Kellogg, in St. Paul, not having been married.

Dr. Cook was a member of the Ramsey County Medical Society, the Minnesota Academy of Medicine, the Twin City Urological Society, the Minnesota Dermatological Society, and the American Urological Association.

Until 1907 he practiced general medicine, when he went to Vienna for a year and did postgraduate work in dermatology and urology, to which specialties he limited his work until his death.

He enlisted early in the last war and after spending several months at Camp Riley and Camp Jackson he was sent to France with the rank of Major in the Medical Corps, where he remained until after the Armistice.

During the last few years of his life Dr. Cook traveled very extensively. He visited South America, Hawaii, took a world cruise, and last year took an extended tour around Africa. Shortly before his last illness he was planning another trip and stated that his only trouble was to find a new place to go to.

Dr. Cook is survived by two sisters, Mrs. F. B. Kellogg and Mrs. F. J. Ottis of St. Paul, and a brother, George Cook of Rochester, Minnesota.

Dr. Cook's fine qualities won for him the affection and loyalty of those who know him well. He was well known by all medical men in this vicinity. As a tribute to him it may be said with no fear of contradiction that he possessed two qualities necessary to every physician: he was honest, he was ethical.

The Committee: S. E. SWEITZER
F. E. FOLEY
C. D. FREEMAN, Chairman

Dr. A. S. Hamilton read the following memorial to Dr. C. Eugene Riggs:

DR. C. EUGENE RIGGS, physician and scholar, educator and original investigator, was born in West Unity, Ohio, in 1853, and died in St. Paul, April 3, 1930. He was descended from an old Maryland family and was attracted to St. Paul, as many other physicians before him, partly by the hope that the vaunted Minnesota climate might heal a suspected pulmonary weakness.

His early education was obtained in the public schools of Ohio, and he later attended Ohio Wesleyan University where he received the degree of A.B. in 1877, and that of M.A. in 1880. At one time in that period of his life he expected to enter the ministry. He later turned to medicine and his first training was received in the office of his brother, Dr. J. U. Riggs, of Bryan, Ohio. He subsequently had one year in the Medical College at Nashville, Tenn., and was graduated in 1880 at the College of Physicians and Surgeons in Baltimore, Md. After one year as intern at the Women's Hospital, in Baltimore, he came to St. Paul in the spring of 1881 and engaged in the general practice of medicine. Apparently, at this time he had no special interest in diseases of the nervous system and, when, almost immediately on his arrival, he was asked to present a course of lectures on *Materia Medica* in the St. Paul Medical College, he accepted. Later he was offered the chair of Nervous and Mental Diseases in the same institution, which offer he also accepted, becoming thus the pioneer in Minnesota in the private practice of neurology and psychiatry. When the medical department of the University of Minnesota was established, he was made Professor of Nervous and Mental Diseases and in 1908 became Director of the Department as well as professor. Preparatory to the reorganization, January 15, 1913, he resigned and in June of that year was made Emeritus Professor of Nervous and Mental Diseases, which position he held until his death. Dr. Riggs was an excellent teacher and an inspiring spirit in all his associations with his students and fellow practitioners and to his patients he imparted confidence and courage. He had an unusual knowledge of current literature in his own field and almost to the last day of his life he read his journals, clipped from them the articles which seemed to him especially valuable and put them away in his filing system. Notwithstanding this familiarity with neurologic and psychiatric literature, he once told me that during his years of active teaching he never delivered a lecture to the students without spending the evening preceding in review of the subject matter. But his interests were not limited entirely to clinical fields and on his return from a trip abroad, he brought back the equipment for a neuropathological laboratory, the first private neuropathological laboratory in the state; and in this laboratory Dr. L. B. Wilson worked out the history of Dr. Riggs' case of subacute combined degeneration with pernicious anemia, the first reported in the state and the third reported in this country.

Throughout a long and active career in the practice of medicine, covering forty-nine years, he was a leader in all movements having to do with his specialty. For ten years preceding the establishment of the State Board of Control, Dr. Riggs was Chairman of the State Lunacy Commission. On one of his trips abroad, he was authorized by Governor Merriam to investigate the insane hospitals of Europe for the purpose of reproducing in Minnesota whatever was of value in European methods of care for the insane. He also interested himself actively in the matter of providing detention wards in our larger cities, in the need of special care for the criminal insane and in the imperative necessity for a voluntary commitment law.

Dr. Riggs was a member of the American Neurological Association, the American Psychiatric Association, the American Medical Association, the Ramsey County Medical Society and the Central Neuropsychiatric Association. He was one of the founders and a past president of the Minnesota Academy of Medicine, and a founder and first president of the Minnesota Neurological Society. He was at one time Chairman of the section of Nervous and Mental Diseases of the A. M. A., and was president at one time of the Minnesota State Medical Society.

He was also a member of the Society of Colonial Wars and of the Sons of the Revolution, of which he had been president, and of the Minnesota Club.

Dr. Riggs was a member of the Plymouth Congregational Church of Minneapolis, Past Master of Summit Lodge, a member of Osman Temple and Paladin Commandery, as well as a 32nd Degree Mason.

Dr. Riggs was a very religious man as one incident of his early career shows. Though he had been offered a position as Chief of the Department of Neurology and Psychiatry in the St. Paul Medical College, the school ceased to exist before he could give his first course of lectures and was merged with the Minneapolis College Hospital in Minneapolis. The meeting for the final settlement of the details of the union and the allocation of titles was held on a Sunday afternoon, and Dr. Riggs announced that rather than attend the meeting on Sunday he would renounce his claim for a position on the faculty and he kept his word, but, nevertheless, was given the professorship in his specialty.

Despite his large private practice and his duties as a teacher, Dr. Riggs found time to be a good citizen, and to contribute to medical literature some 80 or 90 papers dealing largely with the various phases of neurology and psychiatry. The first article of which I can find any record was published in the *Southern Clinic*, of Richmond, Va., in 1881, under the title "Atresia of the Female Genital Tract," obviously at a time when he had no thought of his ultimate relation to psychiatry. The last article I have found is entitled "Address of Greeting to the American Psychiatric Association" at Minneapolis, June 1928, published in the *American Journal of Psychiatry*, 1928-1929.

In the intervening period of forty-nine years Dr. Riggs discussed a very wide range of neurologic and psychiatric topics, and though it is hardly proper to detail them here, I may refer specially to two historical articles which are of distinct value in un-

derstanding the early medical situation in Minnesota. "Minnesota Medicine in the Making" was published in the *State Journal* in October, 1921, and the "Reminiscences of a Neurologist" in the same *Journal* of January, 1928.

Perhaps the high point of Dr. Riggs' professional career was reached the night of April 26, 1928, when he was the guest of honor at a dinner tendered him at the Minnesota Club by a group of professional friends.

Of Dr. Riggs' personal character it is less easy to write. To the public, he was the gentleman and the aristocrat. Severe in his principles, he lived his life according to his creed, never deviating from it. He was not one with whom it was easy to make friends, but, his friendship once given, was loyally maintained. One who knew him well has assured me that he never once heard Dr. Riggs utter a profane word, hardly even a slang phrase. As a past master in the handling of patients, he was well known, but of his kindness, his consideration and his charity to patients, his immediate associates alone were cognizant.

His home life was ideal. On September 11, 1884, he married Mabel Elizabeth Pratt, at Bryan, Ohio, and in his wife, to a very unusual degree, he found a companion who shared his ideals, helped him in his labors and enabled him to devote all his energies to the attainment of the very best in his professional life. To the limited friends who were privileged to enjoy it, the hospitality of this household is a happy memory not easily forgotten.

The Committee: W. A. JONES
E. M. HAMMES
A. S. HAMILTON, Chairman

The scientific program of the evening consisted of two Theses.

Dr. E. V. Goltz (St. Paul) read his Thesis entitled "Primary Carcinoma of the Lungs and Bronchi."

DISCUSSION

DR. C. E. CONNOR (St. Paul): I think that none of us see enough of this type of case to have a very wide experience; I am sure I haven't. Carcinoma of the lung can modify the normal bronchoscopic picture in either one of two ways: First, by bronchial pressure with intact mucosa, in which case the bronchoscope is apt to show a stenosis or, if extreme, a complete occlusion. The latter would be rather unusual. Second, by the appearance in the airway of the tumor itself. These tumors may assume either one or two different types, the fungating, flat, bleeding tumor which suggest malignancy and whose origin is at times determined with difficulty, and pedunculated papillomatous structure which does not at first suggest carcinoma. The latter, however, is not the type which would give the characteristic clinical picture that Dr. Goltz has described. If the tumor has invaded the airway, the condition of the bronchial tree will depend a good deal on the size of the tumor. If the tumor is small there will be very little change other than the collection of sanguineous fluid. If the tumor has reached a stage where occlusion is marked,

either atelectasis or bronchiectasis may be found.

The bronchoscope does offer a distinct aid in diagnosis and every suspicious case should be bronchoscoped. The results are sometimes surprising. Biopsy is also important. In the case of the pedunculated papillomatous tumor that is occasionally reported, permanent cure may be obtained, lasting over five years. Therapy in the commoner clinical type with various lung changes consists primarily of measures for temporary relief, usually aspiration, which will give the patient considerable relief. Another measure, but one which I have never used, is the implantation of seeds. Deep therapy may be tried, but usually avails little.

DR. THOMAS S. ROBERTS (Minneapolis): Being called upon, I will speak, but I cannot add anything material to this discussion since in some 40 years of practice I have seen only a few cases of carcinoma of the lung and they were not primary in the lung. During a year spent as intern in one of the largest hospitals in Philadelphia, there never was a case of primary carcinoma of the lung in the very large number of autopsies that were done there, so far as I can recall. A very considerable number of these were presided over by Dr. William Osler, who never failed to discover and correctly interpret whatever was present.

A case of carcinoma of the lung, though not primary in the lung, seen recently, may be of interest in some of its aspects. A man 66 years of age seemed to be in the best of health until he became greatly depressed mentally (for reasons that were quite sufficient it seemed) when there began a physical decline which was attributed to the state of mind rather than to any disease. He was examined by several physicians who found nothing definite. After a few weeks there developed a condition which Dr. Sam Sweitzer agreed was probably pellagra of a secondary type. The patient had been eating irregularly and insufficiently, substituting for food a certain amount of alcohol and worrying incessantly, which suggested the possibility of pellagra as an explanation of the unusual skin lesions that appeared on feet, hands and head. Later he developed a moderate cough, some difficulty in swallowing, lost flesh markedly, and still his condition was considered to be largely mental. About this time we went to Rochester and he went through the Clinic, was X-rayed, etc., and nothing very definite was discovered, and he came away with the opinion that if he would take a little different view of things he would probably be all right. He did actually gain in weight and made one or two trips to Chicago on business, which looked as though there was not very much the matter with him. Then he began having some pain and distress in the chest and epigastrium. We dined together several times, and it was noticed that at the beginning of a meal he seemed to have a little hesitancy in swallowing, with some cough, but then went on and ate his meal without apparent difficulty. As time went on he began to slip back again, had more distress generally, became partially bedridden, and had one or two attacks of sharp pain in the left chest. The physical signs were still indefinite. Again we went to Rochester, but before going had a complete set of X-rays made here of the chest and abdomen; these showed nothing in

the chest but there was apparently some enlargement of the spleen. Another set of pictures was made at the Mayo Clinic and for the first time there was a slight shadow in the right lung. There was some difference of opinion as to what this indicated, between an interlobar empyema and a malignant growth. (It is only fair to say that a proposal to make a bronchoscopic examination was declined as the patient's condition at this time was such as to make it seem hardly worth while. It would no doubt have cleared up the uncertainty). From this time on he was confined to bed mostly, developed a severe cough with offensive sputum, failed rapidly, and died without a positive diagnosis. Dr. E. T. Bell performed an autopsy and found an extensive carcinomatous involvement of the right bronchus, a large abscess in the upper lobe of the right lung, and the esophagus surrounded and partly destroyed by a carcinomatous mass where it came in contact with the involved bronchus. At this point it was densely thickened and indurated, and denuded of the mucous membrane. Through this extensively diseased esophagus, stomach tubes had been passed several times without causing any noticeable distress to the patient, strange as it may seem. It was Dr. Bell's opinion that the carcinoma was primary in the esophagus and secondary in the lung. Other autopsy findings were an enormously enlarged spleen, weighing 1,000 grams, the lower half being the seat of a large metastatic carcinoma measuring 10x12 cm., the central portion necrotic; an open ulcer, 1.2 cm. in diameter, immediately on the gastric side of the pyloric ring; numerous diverticula of the sigmoid, one at least showing acute inflammation; and a moderate grade of Cholecystitis with a single small gall-stone, certainly a formidable pathological array, and yet this man had comparatively little physical disability until the last few weeks of his life. It was not such a great while before his death that he went to Chicago alone and took care of considerable important business. He must have had this devastating growth developing during the time that we were accusing him of being simply despondent and downhearted. Toward the last, when the mental depression waned almost entirely, about his only complaint was a distress in the region of the stomach and lower chest, and he was wont to say "If I could only get rid of this discomfort I would feel all right."

DR. C. B. WRIGHT (Minneapolis): How long was the duration of the condition in this man?

DR. ROBERTS: I can't say exactly, the onset was so indefinite. He was apparently well until one day something happened to disturb his business relations that depressed him greatly. He went to his summer home in Northern Minnesota and sat on the porch most of the time brooding. Early that fall he showed signs of failing, but was not considered seriously sick. He died the following July. Not one of the X-rays showed anything suggestive until the last set, about eight weeks before his death. I imagine he may have had some difficulty in swallowing and perhaps some discomfort that first summer, but he was not a man to complain.

It all goes to show how mortally stricken a man may be and yet how difficult it may be sometimes to find out what is the matter.

DR. E. K. GEER (St. Paul): I have seen five of these primary lung carcinomas in the last ten years. The last one is interesting enough to report briefly. A man in his late forties was admitted to Pokegama Sanatorium a year ago with an old bilateral upper lobe tuberculosis. In 1914 he had had an active tuberculosis with positive sputum, and the loss of weight, cough and so forth of which he complained before coming to the sanatorium in 1929, was thought to be a recurrence of his old lung lesion. On the usual sanatorium regime he gained 40 pounds but did not lose his cough. His X-ray films on admission showed the old upper lobe tuberculosis and also a shadow at the right root which could have been interpreted as a large gland. About two months ago he complained of dyspnea, and on examination an atelectasis of his right lower lobe was found with marked displacement of his heart and mediastinum to the right. Bronchoscopy done by Dr. Greth Gardiner revealed an intrabronchial growth in the right lower bronchus and a section of this growth showed it to be cancer. The lack of characteristic cough, the absence of chest pain, and the suddenness with which it expressed itself clinically were certainly atypical. The other cases I have seen conformed very well to the chief points brought out so clearly by Dr. Goltz.

Inasmuch as physical examination is often disappointing and the X-ray films apt to be misleading because so many are reported as "probably inflammatory," it seems to me that from the diagnostic side we will spot this form of cancer much more frequently, if we resort to bronchoscopy more often in obscure lesions.

The treatment of primary cancers of the lung has been hopeless in my experience. Deep X-ray therapy may prolong life a little but it certainly does not cure.

DR. HERBERT DAVIS (St. Paul): In how many of those cases did you find tuberculosis?

DR. GEER: The case I have just mentioned was the only one in which clinically demonstrable tuberculosis in the lung was associated with primary lung cancer.

DR. S. MARX WHITE (Minneapolis): I wish to call attention to certain sources of error in diagnosis common when carcinoma is developing in the lung. I have been in a position to see a fair number of cases during many years' service at the University Hospital and in our work in the Clinic. A case occurring in a well-known internist in Cleveland about two years ago illustrates one of the sources of difficulty. This physician, whose name would be familiar to everyone here, had, with an insidious onset, a suppurative process in the left interlobar fissure. This process required drainage but, because it covered up the primary process, the diagnosis of carcinoma could not be made at first but subsequent developments made that diagnosis clear. I have seen such suppurative interlobar processes in carcinoma and they are a serious element of confusion.

A more common cause for difficulty in diagnosis is in the differentiation from pulmonary tuberculosis; particularly when the carcinoma develops in an upper lobe, the X-ray shadow may be that of a

pyramid of greater density than normal, the apex toward the hilus of the lung. With the tendency on the part of the roentgenologist to report such shadows as tuberculosis, even in the absence of such phenomena as cavitation or other processes which are highly significant of a destructive process like tuberculosis, the Roentgen diagnosis is given greater value than it deserves and the clinician is likely to accept the diagnosis as final when it should be taken only as a part of the whole picture.

A third difficulty lies in the fact that with carcinoma the lower lobe pleural effusion very frequently occurs. The effusion masks the infiltrative processes in the lung and there is nothing in the X-ray picture, therefore, to suggest an intrapulmonary process. The frequent occurrence of blood in such effusions is suggestive and often helpful in calling to mind the possibility of carcinoma. The fact that pain is also usually a predominant symptom in carcinoma adds another suggestive point.

Dr. Goltz's paper is a very helpful contribution to a subject of great importance, and it is clear that carcinoma of the lung, while it has certain features highly suggestive from the clinical standpoint, is liable to simulate a number of conditions, and unless we think of it as a possibility in all cases, especially with people in the cancer age, we can easily miss the diagnosis.

DR. SPRATT (Minneapolis): In an abstract of an article on tobacco and tobacco smoke as a factor in cancer, in the *Journal of the A. M. A.* for March 29, 1930, Lickint reviews over 4,000 cases of cancer of the bronchi and lungs from the literature. He finds this five times more common in men than in women. He believes "that this is to be explained in part by the great increase in cigaret smoking, with its attendant inhalation. Not only smokers but non-smokers are exposed to this danger in smokefilled rooms. Because of the finer state of division of the particles in tobacco smoke, they have a much greater penetrating power than have particles of dust. In the case of tobacco smoke, the maximum amount of irritation is produced because, in addition to the mechanical irritation (particles of carbon), there is also a chemical (tarlike combustible products) and a thermal (current of heated air) irritation.

According to Dr. Henry W. Cook, in an address delivered at a convention of life insurance presidents in December, 1929, the expectancy of life has not increased except in the first two years, and no appreciable gain is shown after the age of 50, "and a very marked loss is shown in several very important diseases such as heart disease, now the largest single mortality factor, in cancer, in diabetes, and in death from automobile accidents. In other words, while a baby born today has an increase in life expectancy of 17 years, an adult of 50 or over has no increased expectancy in comparison with 50 years ago, and probably even in comparison with 2,500 years ago, in the days of Pericles."

Dr. Bloodgood has called attention to the fact that cancer of the lip is more common in men than in women, and has brought up the question of its increased frequency in the latter as smoking becomes more common among them.

DR. A. R. HALL (St. Paul): One of the interesting things brought out by the essayist is the increase of carcinoma of the lung. The essayist states that this is a real increase as is shown by autopsy statistics. Autopsies are probably not much better done today than they were 25 years ago; what I mean is that carcinoma of the lung would not have been much more likely to have been missed in an autopsy 25 years ago than it is today, and yet statistics from different countries of the world show that, whereas the primary seat of all carcinomas 25 years ago was found to be in the lung in about one or two per cent of cases, today in all carcinomas the primary seat is found in the lung in about two to three times this percentage. The statistics from the different hospitals in different countries are fairly uniform in this increase. It is interesting to speculate as to what the cause of this increase may be. It must be some world-wide cause. As Dr. Goltz has stated, many different things have been considered that might be a causative factor. The one lung irritant which has been suggested and which would seem to fill the requirement of being world-wide is influenza.

As to diagnosis, the most important thing is that we do not forget that there is such a thing as carcinoma of the lung. It seems to me that pain is more often present in carcinoma of the lung than it is in other obscure lung conditions.

In the way of treatment, deep X-ray therapy, while it does not cure, does seem to slow up the process.

DR. L. C. BACON (St. Paul): My excuse for prolonging the discussion is that this thesis is a timely and valuable one and is entitled to free discussion. The matter of treatment has not been touched upon. At the present time deep Roentgen ray therapy is the only method of treatment which gives promise of possible benefit and even with this we are not hopeful. I have come in contact with two cases of lung carcinoma and the results in one of them indicates that deep therapy should be resorted to vigorously.

The first was a woman of 58 years, slender and small, with a carcinoma of the right breast which was removed by radical operation. She returned in a few months with a metastasis involving the right lung, lower and middle lobes. Deep Roentgen ray treatment was vigorous, and after a stormy period of about three months, during which she expectorated quantities of pus and fibrous tissue, she regained a fair degree of health and lived three years, finally dying from an influenza. Autopsy disclosed complete destruction of the right lung with collapsed thorax completely filled by the remaining thoracic structures. No carcinomatous tissue could be found.

The second case, a large stout woman, 62 years of age, had been in the University Hospital with a diagnosis of carcinoma of the right lung. She had been treated with X-ray until she had refused further treatment and returned home. I came into the case only a few days before her death. Autopsy disclosed complete destruction of the right lung and metastases in the liver and left kidney confirmed the diagnosis. Pleuritic fluid was present and the chest wall had not collapsed. She gave a history of repeated drainage of the pleuritic fluid and I drained

it once during my charge. She apparently died from exhaustion.

One case living in comfort for three years should admonish us to give these very hopeless cases the possible benefit of X-ray.

DR. GOLTZ (in closing): I have nothing more to add, but wish to thank the members for the discussion of my paper. I think the important thing to gather from this paper and from the discussions is that one should bear this condition in mind in all obscure chest conditions.

Dr. Emil C. Robitshek (Minneapolis) read his Thesis entitled "Acute Perforated Peptic Ulcer."

DISCUSSION

DR. JONES (St. Paul): The hour is late but I have some interesting plates I wish to show. The patient, a young man 21 years of age, was admitted to the Ancker Hospital at 8:30 A. M., March 22, 1930. He states that the night before admission he became nauseated and vomited. He retired but was awakened at 4:00 A. M. by a violent pain in his upper abdomen. He took some soda and the pain became worse. A doctor was called and he was sent to the hospital. On admission he was seen by Dr. Colvin. The man was having severe pain in the upper abdomen. The abdomen was rigid but not the so-called board like abdomen. Temperature 98°, pulse 80, leucocytes 10,000. The most probable diagnosis was cholecystic disease or perforated ulcer. An hour after admission the picture had entirely changed. He was having no pain and only a slight muscular rigidity in the upper right quadrant of the abdomen. It was decided to treat him expectantly. An X-ray plate of the abdomen was ordered and it showed air between the liver and diaphragm. I saw the man again in the afternoon and his condition was the same with the exception of a temperature rise to 101°. In view of the X-ray findings, there was no question as to the diagnosis of a perforated viscus. Five per cent of perforated ulcers are sealed locally and do not develop general abdominal symptoms. Another picture was taken and the air bubble was again demonstrated above the liver. In spite of the patient's good condition, but because of the X-ray findings, I finally advised operation, but the patient would not consent. Later in the evening he was again seen and his condition was so satisfactory that I decided to continue the expectant treatment.

Cases of perforated ulcer often show apparent improvement after a few hours but then the symptoms of general peritonitis begin to develop and this, of course, is the reason for early operation. This patient, however, was continually improving and nothing developed pointing to a general peritoneal involvement and we felt these symptoms would have developed by evening as it was 14 hours after the onset.

On the seventh day a picture was taken showing that the air had disappeared, and on the ninth day some barium was given and a duodenal ulcer was demonstrated. I am not advocating the nonsurgical treatment of these cases but I do not believe any one watching this man would have operated upon him before we had these X-ray pictures.

I think a case like this impresses us with the fact that we must carefully evaluate our clinical symptoms.

DR. ALEX. R. COLVIN (St. Paul): First of all I would like to congratulate the essayist on his paper. It is very valuable because of the comprehensive and yet concise statement of the views of those who have large experience in the subject just presented by Dr. Robitschek.

Regarding the case reported by Dr. Jones, I saw this man when he first entered the hospital and the question then seemed not "has he a perforated ulcer?" but "has he a perforating one?" The patient said he had had very severe pain, but at the time of examination he had very little. He had some rigidity but not a board like rigidity. Whether or not he should have been operated on may be a debatable question. I do not think it would have been a mistake to operate. Certainly the free air above the liver seemed a positive indication, but then clinically he was getting well.

Regarding the number of times an ulcer may perforate, I operated twice in one year for perforation of the same ulcer. At the first operation 10 hours after perforation a simple closure was done; at the second perforation about a year later a suture and gastroenterostomy was done 6 hours after perforation. He still has some residual symptoms.

Regarding the time after perforation when recovery may still be possible. Fifteen years ago I saw a young man 36 hours after perforation with all the symptoms of apparently fatal peritonitis. It seemed hopeless to resort to surgery; this was, however, done with only closure of the perforation. On opening the peritoneal cavity there was a regular gush of air and fluid. Drains were used but with practically no drainage. He has remained free from symptoms since. So that the result in Dr. Jones' case can be understood; the perforation became sealed off and the peritoneum took care of the infection, just as it did in my case of 36 hours' perforation with much more extravasated material still to be taken care of after the perforation was closed by operation.

The diagnosis of an acute perforation is usually obvious. I recall one case where, after a midnight examination, the night supervisor, an experienced Sister, wishing to know what action to take, remarked "a very sick man, doctor?" "Yes." "An ulcer?" "Yes." "Perforation?" "Yes." "Operation?" "Yes." The general behavior, combined with the board like rigidity were quite familiar to her. In Dr. Jones' case the picture was not at all so striking and doubt might well be entertained; the radiograph was of striking assistance.

In regard to the incidence of ulcer in Scotland. There are two things that made Scotland famous, whiskey and the Bible. Whiskey has been given as one of the causes of ulcer. I am not sure whether the reason the Scotch have more ulcers perforate is due to whiskey or to economy in the employment of medical assistance.

DR. C. B. WRIGHT (Minneapolis): Acute perforated peptic ulcer is a surgical condition and should have surgical consideration as quickly as possible. Unfortunately, however, these cases are more often

first seen by men with little experience either in the diagnosis or treatment. The reason for this is that perforated ulcers are rare. I have repeatedly heard men in general practice for many years say they have never seen one, and it is exceptional to find men, outside of large emergency hospitals, who have seen many of these cases. Forty-three cases at the Minneapolis General Hospital over a period of 10 years, and operated on by various surgeons, is not a large group when one considers that the Minneapolis General is one of the largest emergency hospitals in the Northwest.

I have seen 9 cases in 27 years of practice. The first was the rarer type of perforated ulcer; that is, a large perforation on the anterior wall. This patient was a young, healthy servant girl without previous symptoms of ulcer, who, after eating a hearty breakfast, collapsed on the stairs and had to be carried to bed. I saw her almost immediately and found her in shock; by that I mean pale, cold perspiration, with a small rapid pulse, and complaining of violent pains in her right lower quadrant. She had vomited, but had not vomited blood. She had dullness in both flanks, generalized abdominal pains with marked rigidity and I felt that she might have a ruptured extra-uterine. She was operated in two hours. A large meal consisting of meat, potatoes and bread, was found in her abdominal cavity, and a perforation in the anterior wall of her stomach the size of a dollar. Sewing up the opening with a purse string suture and reinforcing it with mattress sutures, washing her breakfast out of her abdominal cavity with salt solution, was followed by recovery. Her convalescence was complicated by infection of the abdominal wall, right sided pneumonia, and phlebitis. I saw her 25 years later; she has never had any stomach trouble since and nothing could be found by fluoroscopic examination.

There were two other cases of stomach perforation, one a slow, perforating ulcer on the anterior curvature, which was readily diagnosed but refused operation and died a few days later at home, of a general peritonitis. A third case was in a young woman where the ulcer perforated into the lesser peritoneal cavity and was cured by draining a large abscess sometime later.

I have seen six duodenal ulcer perforations. One of these cases had been treated by Osler in 1903 for a dilated stomach; later by Sippy. He was finally operated on by Theodor Bratrud for a sudden perforation, with apparently complete recovery, but died three years later of a gastric hemorrhage. Two other cases were not seen until 16 hours after perforation had occurred; both had fairly large perforations and died of general peritonitis after the operation. Another case recovered following an operation for perforation of the duodenum by simply closing the ulcer. He later had several attacks of hemorrhage and died six years after the operation in a convulsion. This patient refused hospitalization until the very last, after a long period of vomiting, and died from what apparently was gastric tetany. At autopsy he showed a tremendously dilated stomach, apparently without obstruction because one could easily put two fingers through the pylorus.

Two others are living, one 10 and one 20 years after the operation, both having had recurring at-

tacks of ulcer trouble. I have never seen a case of ulcer perforate under any kind of proper medical management. However, cases have been observed by others. It must be a very infrequent happening.

A previous history of ulcer does not help us, as the history is difficult to obtain and statistics will show that only about 59 per cent of those cases have had a previous history of ulcer.

Accuracy in the recognition of a surgical abdomen can, in the last analysis, only be obtained by care in the examination of the abdomen and by experience on the part of the examiner. There should be no delay in an attempt to make a refined laboratory diagnosis in these emergency cases, and the method of treatment should be determined by the conditions which are present.

My own experience leads me to believe that cases of chronic ulcer in which there has been hemorrhage, or penetration, or perforation should be kept under observation and treated for long periods of time; the longer the better, and by treatment I do not mean milk and powders alone. More important are general hygienic measures such as careful living with plenty of rest and a well balanced bland diet which contains sufficient vitamins.

DR. J. T. CHRISTISON (St. Paul): It is not my intention to discuss so valuable a surgical paper but I would like to call the attention of the Academy to the fact that perforating ulcers occur in children not infrequently. I have seen three of them. One was sent into the hospital with a diagnosis of acute appendicitis, another of intussusception, and another of pneumonia. Death occurred in all three, and autopsies were had. Two of them had a perforated ulcer on the posterior wall of the stomach at the pyloric end, and the other had a perforation on the anterior wall about the middle of the stomach.

We must not lose sight of the fact that even in very young babies ulcers do occasionally develop. One of these babies was 9 months, one 11 months, and the other 14 months.

DR. ROBITSHEK (in closing): I have nothing to add, but wish to thank the members for the very kind reception they have accorded my effort and to thank them as well for their discussions.

The meeting adjourned.

R. T. LaVake, M.D., Secretary

BOOK NOTICES

MODERN OTOLOGY. By J. C. Keeler, M.D., F.A.C.S., Associate Professor of Otology at Jefferson Medical College. 858 pages, 90 illustrations, 15 colored plates. Price \$10.00. Philadelphia: F. A. Davis Co., 1930.

This is an excellent up-to-date text-book on otology written in a clear, readable style. While it especially meets the needs of graduate students in otology, it contains much of value to both the general practitioner and the specialist. There are the section headings usually found in a book of this nature. That on anatomy contains more about the development of the ear and its related structures than is often included in texts. That on examination of the ear is notable in that it omits or merely mentions the hearing tests that are no longer com-

monly used, and fully discusses the useful ones. Exemplifying the up-to-date nature of the work are the ten pages devoted to the audiometer. There are sections on malformations, middle ear disease, mastoiditis, intracranial complications, internal ear disease, otosclerosis, otology in children, and medico-legal otology. The section on otology in children well deserves the attention of general practitioners and pediatricians. One of the most attractive features is the short bibliography of recent literature at the end of each section—C. W. RUCKER, M.D.

THE MEDICAL CLINICS OF NORTH AMERICA. (Chicago number, September, 1929.) Octavo of 232 pages with 61 illustrations. Per clinic year, July, 1929, to May, 1930. Paper, \$12.00; cloth, \$16.00 net. Philadelphia: W. B. Saunders Co., 1929.

This is the Chicago number, and has some very interesting contributions.

The first paper, by Dr. Arthur R. Elliot, is a discussion of Epistaxis in Cardiovascular Condition, showing the possible serious effect which may follow if the hemorrhage be profuse or prove intractable.

Dr. C. G. Gules has an interesting discussion on Anemias of Infancy.

A number of papers on heart disease include one on Bundlebranch Block; Electrocardiographic Studies in Hypertension; and Milder Types of Coronary Accidents.

Dr. C. W. Finnerud has a paper on various dermatological disorders.

Other papers of no less interesting character go to make up a very interesting volume.

—A. E. CARDLE, M.D.

THE NORMAL DIET. A simple statement of the fundamental principles of diet for the mutual use of physicians and patients. By W. S. Sansum, M.D. Third revised edition. St. Louis: C. V. Mosby Co., 1930. 134 pages. Price \$1.50.

The Normal Diet by W. D. Sansum is a very interesting book for the average physician or the intelligent layman who is interested in his own or his family's nutrition.

He discusses bulk requirements, acid-alkali equilibrium and acidosis, caloric, protein, mineral, vitamin, and water requirements of the body and gives sample menus for different types of diet.

—LEWIS M. DANIEL, M.D.

THE MEDICAL CLINICS OF NORTH AMERICA. Vol. 13, No. 3. (New York number, November, 1929.) Octavo of 272 pages with 58 illustrations. Per clinic year, July, 1929, to May, 1930. Paper, \$12.00; cloth, \$16.00 net. Philadelphia: W. B. Saunders, 1929.

No. 3, Vol. 13, of this publication, is the New York number. It contains sixteen articles or clinics. "Functions of the Gall Bladder" by Drs. I. W. Held and A. Allen Goldbloom is well done and interesting reading to every doctor. Dr. George Draper's panelling of the constitution is extremely good reading and we only regret that the procedure he uses does not achieve brilliant results in our inexperienced hands. The clinics of Dr. Pardee and Dr. Elwyn need no advertising. In such limited space it is impossible to do more than say that this is a good number.

—LEWIS M. DANIEL, M.D.

CLINICAL PATHOLOGICAL CONFERENCE

BY E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—362.

Woman, 42 years old, admitted February 18, 1930, complaining of palpitation for six weeks, nervousness and loss of weight for four months, and enlargement of her neck for 16 years. The enlargement of the neck had gradually increased during the past few years. There were no symptoms referable to the thyroid until about four months ago.

Family history negative. Menstruation regular until four months ago; no menses since that time.

Patient was restless and had an anxious expression. Her skin was moist and warm. There was no exophthalmos and no lid lag. Marked irregular enlargement of the thyroid gland. Patient wore plates, both above and below; there were a few stumps of teeth present with caries and gingivitis. There was a faint tremor of the tongue. The right tonsil was buried and the left was enlarged. There was a bruit over the right lobe of the thyroid. The right lobe was about the size of an orange; the left was not nearly so large. No abnormal sounds were heard in the lungs. The heart rate was rapid but regular. There was a double murmur over the mitral area; no enlargement of the heart.

The temperature on admission was 98.4°; pulse 114; respirations 25. Basal metabolic rate +81. Urine negative. Lugol's solution had been given daily for seven weeks prior to admission, 60 drops a day. February 24 the temperature rose to 100.4°. February 26 basal metabolic rate +60; pulse 104.

February 26 patient was operated upon and an adenoma 5 cm. in diameter was removed from the thyroid. The arteries of the upper pole of the left lobe were ligated. Following the operation the temperature ranged from 99.6° to 104.2°. The patient became delirious shortly after the operation and remained so until her death on March 6, 1930.

The adenoma showed a moderate hyperplasia with foci of lymphocytes (the characteristic picture of Graves' disease).

Post-mortem report. The body is poorly nourished; no edema. The heart weighs 275 grams and shows no organic disease. The right lung weighs 520 grams, the left 620 grams. Both lungs show edema, congestion, and bronchopneumonia. The liver weighs 1350 grams; shows some cloudy swelling but no passive congestion. The thyroid shows

a large area of necrosis, corresponding to the ligature of the arteries at the upper pole. Portions of the thyroid removed at post-mortem show a moderate hyperplasia with foci of lymphocytes.

Diagnosis. Graves' disease (toxic adenoma); postoperative bronchopneumonia.

Comment. This is a case in which Graves' disease developed in an adenomatous goiter. This form of thyroid disease is commonly called toxic adenoma. Apparently the basal metabolic rate had not been sufficiently reduced when the operation was undertaken.

Autopsy—30—576.

Man, 48, admitted March 26, 1930, complaining of severe nausea, vomiting, and headache. The present illness began about three weeks ago with vomiting, headache, and abdominal pain. The pain was localized in the right upper quadrant. The patient was confined to his bed from the time of the onset of his illness.

Upon admission his temperature was 100.5° to 101°; pulse 80 to 100; blood pressure normal. No jaundice was present. Patient was acutely ill and complained severely of upper abdominal pain. There was right rectus rigidity but no sign of generalized peritoneal irritation. He vomited a dark brown fluid material. X-ray examination showed a fistula between the fundus of the gall-bladder and the hepatic flexure of the colon. Leucocyte count 6000 to 7000. Urine negative. Wassermann reaction strongly positive. Stools not examined.

Past history revealed a severe attack in the upper abdomen five years ago. He was confined to bed at intervals during that year with upper abdominal pain. He was never jaundiced at any time. At the age of 26 he had an injury to his left hip and had limped ever since.

The diagnosis of cholecystitis was made. Exploratory laparotomy March 29. The surgeon found a marked enlargement of the liver and numerous old adhesions throughout the upper right abdomen. No organ was removed. A drain was inserted. The wound was closed.

On the third day after the operation about 1500 c.c. of clear fluid drained from the abdominal wound. The wound opened spontaneously but was resutured immediately. Death, April 12, 1930.

Post-mortem report. No edema; no jaundice. The left leg is 5 cm. shorter than the right. There is drainage of fluid from the abdominal incision.

200 c.c. of clear fluid are found in the peritoneal cavity. The edge of the liver is 8 cm. below the costal margin in the right midclavicular line. There are numerous old adhesions between the intestinal coils, the liver, and the diaphragm in the right upper quadrant. The cecum and appendix are drawn up into the right upper quadrant by adhesions.

The heart is normal, but there is a syphilitic aortitis which has not extended into the aortic valve and has not produced an aneurism. The lungs show edema and congestion. The spleen weighs 200 grams and shows no disease.

The liver weighs 1900 grams and shows a very marked example of *hepar lobatum*. There are numerous healed gummas throughout the organ which cut it up into irregular lobules. The gall-bladder shows a thin wall and contains no calculi. There is a fistulous tract communicating with the colon at the hepatic flexure.

The left hip shows marked roughening and loss of tissue on both the head of the femur and the acetabulum.

Diagnosis. Multiple healed gummas of the liver (*hepar lobatum*). Extensive adhesions throughout the upper right quadrant, probably due to syphilis. Fistula between gall-bladder and the hepatic flexure. Postoperative edema and congestion of the lungs.

Comment. It is not often that syphilis produces clinical cirrhosis of the liver but in this case obstruction in the liver was so great that this stage had been reached. The adhesions around the liver are presumably due to syphilis of the liver.

Autopsy 30—202.

Man, 71, a mild diabetic for about 20 years, obese and comparatively healthy, complained of a continuous dull pain in the stomach in November, 1921. This had been present for many years and was relieved only partially by soda. In January, 1923, this condition became acutely aggravated. Self-induced vomiting would relieve the distress. The vomitus was seen to contain particles of food ingested two days before. Again, gastric lavage might fail to recover the raisin eaten the night before. Gastric analysis showed free HCl 38° and total acidity 54°. Stools showed no occult blood. There was indefinite soreness over the epigastrium but no mass could be palpated. Roentgen examination showed a slightly enlarged hypotonic stomach with a retention of barium for 28 hours. The pylorus could not be made to fill properly and the duodenal cap was poorly made out. A beginning carcinoma or a concealed ulcer at the pylorus, with retention, was considered a possibility both clinically and roentgenologically. No definite diagnosis was reached at the time, however, and the patient continued to be treated symptomatically with indifferent results. Gastric distress was present every day, more or less, especially after meals. December 1, 1923, the patient developed acute epigastric pain with vomiting and an unusual amount of gas. Roentgen examination at this time showed an en-

larged stomach with sluggish peristalsis and spastic deformity at the pylorus. The duodenal cap showed a definite filling defect. A small amount of barium residue was noted at the end of 48 hours. Roentgen diagnosis of chronic duodenal ulcer with acute retention was made.

Laparotomy was then performed. A large mass about the size of an orange was found in the region of the pylorus, obstructing the orifice. The regional lymph nodes were enormously enlarged, quite hard on palpation and extensively involved. The head of the pancreas was also involved in the mass. The liver showed no evidence of metastasis. Gastroenterostomy was done. Diagnosis of probable carcinoma of the stomach was made, without biopsy.

Before operation his hemoglobin was 92 per cent, erythrocyte count 5,400,000, and leucocyte count 18,300. Two weeks later the white count was 7,250. Three weeks later a second laparotomy was done to relieve intestinal obstruction due to adhesions. The gastric tumor was noted at this time to be considerably reduced in size.

Subsequently history was that of a usual mild diabetic whose urinary sugar was controlled by diet and whose blood sugar was never over .285 per cent. He was well built, rather obese, weighing around 170 lbs. He presented himself from time to time for various minor ailments, such as chronic urethritis, bilateral otitis media, impairment of vision due to hyaline degenerative spots in the left macula, etc.

In December, 1928, the patient for the first time complained of intermittent heart beats. Electrocardiograms showed left and right ventricular extrasystoles. Blood pressure was 110 systolic, 55 diastolic. Pulse 58 per minute. His cardiac condition became progressively worse and in April, 1929, edema of both legs and irregularity of pulse developed. In August enlargement of axillary and inguinal lymph glands was noticed for the first time. In September hemoglobin was 70 per cent; erythrocyte count 4,040,000; leucocyte count 15,600 with a differential count showing neutrophils 49 per cent, lymphocytes 47 per cent, monocytes 3 per cent, and eosinophils 1 per cent.

On January 31, 1930, swelling of the right abdomen and swelling and pain in the left leg developed. Regional glands increased in size and number, some in the axilla reaching the size of a hen's egg. A few glands were now palpable in the neck. They were discrete, movable and fairly soft in consistency. His hemoglobin was now 45 per cent; erythrocyte count 3,080,000; leucocyte count 18,500 with a differential count of 54 per cent neutrophils, 43 per cent lymphocytes, and 3 per cent monocytes. No pathologic forms of lymphocytes were noted in the study of the blood smears. Biopsy of an axillary node was done on February 4 to determine the nature of the adenopathy, whether Hodgkin's granuloma, leukemic infiltration, or metastatic carcinoma. Histologic diagnosis was leukemic infiltration of the lymph node. On February 10 the patient died of circulatory failure.

Post-mortem report. Marked ascites. Appendix 10 cm. long and 1 cm. in diameter, composed of

solid, homogeneous, whitish tissue. Each pleural cavity contains about 1500 c.c. of clear fluid. Moderate enlargement of the heart with left ventricular hypertrophy. Moderate atelectasis of the lungs. Spleen weighs 120 grams; large prominent corpuscles. Liver about normal size; pale gray, cloudy surface.

Stomach definitely enlarged; maximum circumference 25 cm; the entire wall of the stomach is thickened and of a tough leathery consistence; very marked hypertrophy of the mucosa; the rugæ appear as deep, thick folds as large as the convolutions of the brain. A specially large tumorlike thickening 6x6x5 cm. surrounds the pyloric end of the stomach and causes obstruction. Many large lymph nodes on the curvatures of the stomach and around the head of the pancreas. The head of the pancreas is partly replaced by whitish, tumorlike tissue.

The right kidney weighs 160 grams; it has a smooth surface; the cut surface is mottled with hemorrhagic and grayish areas. The left kidney weighs 700 grams; the cortex is markedly infiltrated with grayish, tumorlike tissue.

The mesenteric and retroperitoneal lymph nodes, those along the curvatures of the stomach, around the pancreas, the hilum of the liver, as well as the cervical, axillary, and inguinal groups are enormously increased in size, varying from one to three cm. in diameter.

Microscopic examination of all the tissues shows massive leukemic infiltration. The tumor throughout the stomach is leukemic infiltration also.

Diagnosis. Lymphatic aleukemia with massive organ infiltrations.

Comment. This case is remarkable in that the patient lived so long after the exploratory operation. It also shows the danger of assuming the nature of a tumor without a microscopic examination. If this patient had been given some specific cancer treatment, it would have apparently presented a strong argument for a curative influence.

Autopsy—30—673.

Woman, 39, unmarried, admitted to hospital April 24 and died May 1 (7 days). October 1, 1929, she started to feel ill. Noticed enlargement of abdomen, especially on left side. At the same time developed dyspnea and began to lose appetite and became weak. Saw a physician who tapped left chest four times and removed about 10 quarts of fluid in all. Diagnosis of ovarian cyst was made at the same time. November 28, an ovarian cyst about the size of a grapefruit was removed. Microscopic sections proved it to be a malignant cystadenoma.

Extensive metastases were found involving the intestines, mesentery, and other pelvic organs. Drain was left in the wound to allow large accumulations of fluid to drain off.

Left hospital after two weeks feeling much improved, but the incision did not close up entirely and has been draining since. There was never any pain connected with the sinus.

Since the present illness developed, her mouth had been very tender, especially when she ate any-

thing tart or bitter. About three weeks ago white sores started to appear in her mouth and extreme pain had been present since. Five weeks ago she developed diarrhea; would have two to three well formed stools and in between times fluid stools, about six a day. Marked emaciation and weakness developed; no vomiting. Three weeks ago noticed swelling of arms and legs.

No heart trouble that she knew of. No history of rheumatic fever, chorea, or scarlet fever. Never had precordial pain except during weak spells. Previous diseases: measles, mumps, whooping cough. Used glasses when in school. Posterior nasal discharge in morning for past year. Occasionally felt gas on stomach, relieved by vomiting; had not occurred lately. Menstruation at 12; 28 day interval; five day type; quite painful; last fall became irregular and several large blood clots were passed. Has not menstruated since laparotomy. No vaginal discharge. Weight loss 55 lbs. Mostly bedridden since last fall. Very little exercise. Father dead 75, old age; mother 52, pneumonia. Three brothers living and well; five sisters living and well. No cancer history in family. Occupation, school teacher.

Examination. Very emaciated, weak, and anemic. Bone frame large. Very intelligent. Skin thick, tough, and pale; no turgor. Weight approximately 100 lbs. Mouth showed swollen mucous membrane, very red, small white spots all over, extremely tender, with a bad odor. Spots noted especially on gums and about teeth. Heart rapid, apparently not enlarged. Blood pressure 95/70. Presystolic murmur at apex. Lungs, dullness posteriorly on lower right side below sixth spine and over entire midaxillary space on right below second interspace. Left side clear. Decreased breath sounds on right. No râles or change in vocal fremitus. No masses in breasts. Abdomen: large midline scar, extending from symphysis upward 20 cm; draining fistula 12 cm. below umbilicus; foul, purulent discharge. Abdomen rigid throughout, no tenderness, no abnormal enlargement, no definite palpable mass; tympany over left upper portion and in right iliac region. Labia swollen and edematous. Small external hemorrhoids. Pitting edema of arms and forearms, especially dependent parts. Legs very much swollen. Pitting edema, especially over ankles. Definite tender mass on left side just below inguinal ligament, probably enlarged lymph gland. Nervous and mental examination negative.

Urine: albumin 3+; very many white blood cells. Blood: hemoglobin 51 per cent; red cells 2,890,000; white cells 54,000; polymorphonuclears 90 per cent, lymphocytes 7 per cent, monocytes 2 per cent, basophils 1 per cent. Polymorphonuclears showed marked shift to left and heavy granulations. Blood group 4. Blood urea nitrogen 14.93 mg.; sugar .089; van Slyke 31 mg. Uric acid 3.8. Stools, thin, watery. Blood Wassermann negative. X-ray, April 23, negative heart; enlarged gland in left hilum; fibroid tuberculosis right apex; marked elevation of right diaphragm.

Medical consultation: general anasarca. Apex, loud systolic murmur with accentuation of first sound; P2 accentuated. Tentative diagnosis, double

mitral disease. Advised digitalization.

April 25, condition about the same. April 26, disturbed by diarrhoea. Mouth not as sore as formerly. Slept some and looked a little brighter. April 27, complained of hunger. Edema gone from arms and upper trunk as result of limiting fluids and perhaps digitalis. Patient very hopeful but failing. April 28, a little brighter. Given charcoal; none seen in stool. Edema gradually disappearing. April 29, failing; very limp and weak; irrational. More charcoal given but none seen in stool. Emesis of grayish fluid toward evening. April 30, patient stuporous; no complaints. Blood pressure 65/40.

Codein sulphate, mineral oil, tincture of digitalis, tincture opii, bismuth subnitrate, charcoal, adrenalin, morphin sulphate, chloral hydrate, caffen sodium benzoate.

Temperature 97° to 100°. Pulse 70 to 130. Respirations 16 to 20. Intake 500, 500, 615, 500, 500; output not measured.

Post-mortem report. Rather marked emaciation. 400 c.c. of clear fluid in the right pleural cavity. Heart 235 grams; fresh rheumatic endocarditis of mitral valve. Cloudy swelling of liver and kidneys. True pelvis is filled with necrotic tumor tissue which is adherent posteriorly and laterally to the pelvic wall and superiorly to the coils of intestine. There is tumor infiltration of the anterior abdominal wall above the pubes. Uterus normal except for a few small fibroids and some tumor infiltration of the right horn. Ovaries and tubes cannot be demonstrated in the tumor mass.

Diagnosis. Carcinoma of the left ovary with recurrence in the pelvis and metastases to the lateral, anterior, and posterior abdominal walls; acute bacterial endocarditis.

Comment. A large proportion of ovarian carcinomas develop in cystic ovaries. This tumor recurred earlier than is usual. Death was due in large part to pelvic infection. The rheumatic endocarditis represents a terminal infection with streptococci.

Autopsy--30—504.

Boy, 17, admitted first, April 26, 1928. He was well until January, 1927, when he contracted a pleurisy which was followed by pneumonia and empyema. He was in bed for 11 weeks at that time. In May, 1927, he was able to walk around but still felt weak. About the middle of June, 1927, he began to complain of pain in his lumbar region. About one month later a clinical diagnosis of tuberculosis of the left sacroiliac joint and the fourth and fifth lumbar vertebræ was made. He was put into a body cast in July, 1927. He improved until February, 1928, when he began to lose weight and strength, and in April he gradually developed pain in the lumbar region which radiated down to the left hip and knee. The pain was of a dull character, becoming sharp intermittently. The patient has been in bed since that time.

Physical examination, April 26, 1928. A scar about three inches long in the right anterior axillary line where a portion of the fourth rib had been removed for the drainage of empyema. The empyema

still discharged a little when the patient had a cold. Heart negative. Tenderness in the left sacroiliac region; tenderness over the fourth and fifth lumbar vertebræ; also muscle spasm in this region. Limitation of flexion of the hips. On the right side there was also slight limitation of abduction at the hip with some muscle spasm. Positive Kernig on both sides. No enlarged lymph nodes.

Diagnosis at this time was tuberculosis of the fourth and fifth lumbar vertebræ with marked compression and beginning abscess formation. November 8, 1928, an infection of the left sterno-clavicular joint developed.

Laboratory data. April 30, 1928, hemoglobin 55 per cent; red cells 3,560,000; white cells 14,750. August 7, 1929, hemoglobin 70 per cent; red cells 4,300,000; white cells 12,600. December 27, 1929, hemoglobin 50 per cent; red cells 3,520,000; white cells 21,650. The leucocyte count was never below 15,000. The urine showed albumin (+) on April 30, 1928; no albumin found later.

Guinea pig inoculation of pus from the sterno-clavicular abscess and from the lumbar abscess, negative for tuberculosis, in March, 1929.

Repeated incisions were made in the lumbar abscess and pus was evacuated. Occasionally the lumbar abscess ruptured spontaneously. The patient died April 1, 1930.

Post-mortem report. Body markedly emaciated. Several discharging sinuses in the lumbar region and along the hip. A healed sinus over the left sterno-clavicular joint. The peritoneal cavity contains 500 c.c. of purulent fluid. The origin of the peritonitis is found to be from the abscess in the lumbar region which had penetrated anteriorly. The pleural cavities show heavy fibrinous adhesions throughout; no pus. The heart and lungs show no disease. The spleen weighs 1100 grams; the liver 4000 grams; both of these organs show extensive amyloid disease. The kidneys together weigh 330 grams and show fairly extensive amyloid disease. There are many large lymph nodes on the anterior aspect of the lumbar vertebræ which show adenitis microscopically but no tuberculosis. There is a dissecting abscess behind the psoas muscle on both sides which extends down into the left sacroiliac joint. There is extensive suppuration and destruction of the body of the fifth lumbar vertebra.

Bacteriologic examination of the pus shows non-hemolytic streptococci; no tubercle bacilli.

Microscopic sections of the tissues in the region of the abscess, the lymph nodes, and elsewhere show suppurative inflammation but no tuberculosis.

Diagnosis. (1) Suppurative osteomyelitis of the lumbar vertebræ with extension into the peritoneum and general peritonitis. (2) Marked amyloid disease of the liver, spleen, and kidneys.

Comment. The course of this case was evidently as follows: empyema following pneumonia early in 1927; osteomyelitis of the lumbar vertebræ and the left sterno-clavicular joint, resulting from the empyema; general amyloidosis resulting from the osteomyelitis. Psoas abscesses are usually due to tuberculosis but in this case it was due to non-hemolytic streptococci.

**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Myrtle C. Lee, B.S., Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Dr. Will H. Moore—an Efficient Health Officer

Dr. Moore, Health Officer of Valley City, has made a very enviable record and is to be complimented. Dr. Moore has the full coöperation of the physicians of this city. Preventable diseases are held in check, quarantines established and prompt reports are forwarded to the State Health Department. A special effort is being made to ascertain the source of all venereal diseases, thereby giving Valley City an exceptionally low rate. More "Moore's" throughout North Dakota would place the State on a very high plane of public health efficiency.

Do You Report Births Within the Three Day Limit?

Milk Survey in North Dakota Under Way

Dr. F. A. Clark, Associate Milk Inspector of the United States Public Health Service, has been assigned to this State to coöperate with Mr. A. L. Bayone, the State Sanitary Engineer, in conducting a milk survey, covering approximately 20 North Dakota towns and cities. The survey consists chiefly in the inspection of dairies and pasteurization of plants.

Do You Report Births Within the Three Day Limit?

The Woman's Auxiliary to the American Medical Association has developed from a purely social body to a real service organization under its present very efficient leadership. We extend them our congratulations and full coöperation.

Do You Report Births Within the Three Day Limit?

A very interesting group of tables, graphs and charts is now on display at the Health Department. One set, consisting of maternal deaths in the State, brings out some surprising facts as to causes of these deaths, the lack of prenatal care in the majority of the cases and the very large number of preventable deaths from such causes as puerperal septicemia, and albuminuria.

Accidental deaths for the past three years are grouped as to sex, age and cause.

Several charts show the number of cases of preventable diseases together with the deaths resulting therefrom. A seeming increase in preventable diseases is noted for the year 1929. It is believed that this is due in part to more complete reporting.

Mimeographed folders of these sets will be made up and sent to physicians and health officers if there is a sufficient number of requests received.

Do You Report Births Within the Three Day Limit?

The Relation of Occupation to Cause of Death

The Census Bureau is insisting on more complete and accurate detail on death certificates, due to the many requests for more information with respect to the relation of occupation to the cause of death. Therefore, in giving occupations, be definite. Do not state "Railroad Employee," but rather, "(1) Fireman. (2) Steam Railroad. (3) Great Northern Railway."

Do You Report Births Within the Three Day Limit?

In connection with May Day activities in Dunn County, eleven community play days were held throughout the county in which over one thousand children took part. The athletic events were started off with a health parade, disclosing some very splendid health representations, consisting of posters, health drills, songs, floats and children dressed as fruits and vegetables. The school exhibits indicated that handwork had been correlated with their health study.

Do You Report Births Within the Three Day Limit?

Resolutions passed at the Sixth Annual Conference of the North Dakota Health Officers Association will be found elsewhere in this issue. The meeting was well attended in spite of bad weather and roads. Many interesting and instructive papers were read, including two by men from out of the State. A. E. Bostrom, M.D., Epidemiologist, at Waubay, South Dakota, and D. C. Lockhead, M.D., Deputy Health Commissioner, at Rochester, Minn.

Reports received from Pembina County show that some very excellent work is being done among the school children. During 1929, a total of 3034 children were examined. Through these examinations it was found that 1752 children had some defects. Almost 40 per cent of these were corrected during the year. In addition to the school service, nurses of Pembina County made 139 preschool visits, held 11 preschool conferences and 11 health talks were given.

Do You Report Births Within the Three Day Limit?

Q. What kind of physician or surgeon does not subscribe for and read the official journal of his state society or the journal of the American Medical Association?

A. The same kind as the health officer who does not read the American Journal of Public Health. This opinion is based on the old scientific axiom that "Things Equal to the Same Thing Are Equal to Each Other."

**Do You Report Births Within the Three Day Limit?
If You Do, You Save Much Correspondence!**

**THE
JOURNAL-LANCET**

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 The Official Journal of the
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 The Hennepin County Medical Society
 The Minnesota Academy of Medicine
 The Soo Railway Surgical Association
 and The Sioux Valley Medical Association

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MINNEAPOLIS, JUNE 1, 1930

ADVERTISING CRIME

Of late the newspapers of the whole country, with very few exceptions, have given enormous space to the advertising of criminal acts. Murders, assaults, and acts of violence of various kinds have been given much publicity, and in some instances it seems highly probable that the publication of such news has helped many criminals to escape; they have taken warning from what they have gleaned and no one knows what they will do in the future.

Some day we will wake up to the realization that it is important to withhold information of this sort and not give the criminal an inkling that he is suspected and probably give the officers a chance to capture him. But this printing of crime news in detail by the papers is getting to be rather burdensome and it is hard for the average newspaper reader to keep up with the criminal and his performances,—if his mind runs that way. There are but few papers that pay but little attention to the publishing of details of criminal conduct and among them the *Christian Science Monitor* is outstanding in this respect. Some other papers could do well in copying this policy of avoiding topics of criminal activity and thus suppress suggesting to the potential criminal the success which may crown his efforts.

On the other side is the attitude toward the courts, which is anything but respectful in the majority of instances. And how many of these criminals are convicted after they are arrested? Very few in comparison to the crimes committed. Is there not a solution for this? Of course one might say, too, that we need more police officers. So we do. But there are so many loopholes in the laws that the real criminal can get through most of them without much difficulty. He comes off with flying colors and is more often acquitted than punished for the damage he does to his fellowmen.

Then, too, the mental status of the criminal must be considered, and it may be that the man who is dangerous to the public is so because he is a feeble-minded man, a moron, or a dement, in which case he should be properly taken care of. But under the present circumstances he is not, but is allowed to wander about as he pleases; no one is interested, no one cares for this unfortunate, and he goes on with his life of crime.

Bombs are being circulated in Minneapolis at the present time, so the newspapers tell us, and, of course, in time they may be thrown or exploded or used to wreck houses or individuals with. Yet, again, no effort is made to segregate the men who are responsible for these happenings. If they are insane they should be confined to the state hospital for the insane, and if not, let them go on just as they please; and the situation is treated very much as the prohibition question is—being laughed at by the majority of politicians.

DEATH ON THE GOLF LINKS

It is remarkable how many deaths are recorded on the golf links throughout the United States and most of them from heart disease. Whether they are from heart disease has not been fully determined, but undoubtedly a good many of them are. And from the fact that they occur in elderly people, men of sixty and seventy years of age, who have lately taken up golf and who grow so enthusiastic they forget to exercise with a little caution, the editor wonders if there is not a little too much stress laid on exercise for older people who are not accustomed to much physical activity.

We are told that a man in Minneapolis, the head of a big manufacturing plant, had an attack last week of what he probably did not consider a serious indisposition, but it was recorded. And a week later he was out on the golf links again and died suddenly on the links.

Now we would like to know whether this was a case that a doctor should have seen before this man undertook the second game of golf, and whether he should have been advised not to play rather than risk a life and the unhappiness of a family for a little ordinary sport.

We have had a number of deaths from golf in Minneapolis simply because the victims were approaching middle life or perhaps old age; and yet they will go out and exercise without any reference to the condition they are in and play until they drop dead. The examination of a patient of this kind is not a very difficult matter and a doctor who is a real doctor would determine very clearly whether the man was fit to go out and perhaps overexercise when he was in such peril.

It is entirely right that every man who is between sixty and seventy years old, or even younger, be submitted to an examination as to his fitness for strenuous exercise. But it is fair to assume that many patients will not admit that they are unfit for strenuous exercise; or they may have a belief in something that will benefit them or make them feel better—even if it is playing golf.

ETHICS

"Ethics" is very interesting as a subject but very little observed by the practicing physician of today. The word is defined in the Practitioner's Dictionary (Gould) as "the duties a physician owes to himself, his profession and his fellowmen." In Webster's Collegiate Dictionary it is defined as "a treatise on morals, or science of moral duty; broadly, the science of ideal human character, moral principles, quality or practice." You may take whichever definition you please. But Dr. Shirley W. Wynne, the New York City Health Commissioner, in his address before the Sixth Annual Convention of the New Jersey Hospital Association, goes into it a little more clearly. He warns medical and surgical groups to take action against their incompetent colleagues, "or else the public will."

The physicians' code, Dr. Wynne asserted, often is used to cover the incompetency of certain members. As a matter of fact, the average group of physicians, taking them as a whole, do not pay much attention to ethics,—at least they do not look at it in the same light as we used to consider it when some of us were younger. Consequently, it is interesting to note that Dr. Wynne states that hundreds of medical societies take no action against the incompetent

physicians, but, rather, are trying to obscure the faults within their ranks. As a matter of fact, one can pick a fight anytimes one wants to with a doctor.

When Dr. Wynne maintains that only a small fraction of one per cent of the doctors of the country can be called incompetent, yet this number is sufficient to throw discredit on the entire profession, the editor assumes that he was speaking strictly of doctors, or men brought up under medical training. At this time we have more doctors than we ever had before, and among them many men who call themselves doctors yet who have no degree whatever and who belong to the irregulars; consequently they cannot be classed as physicians, or doctors, and yet someone will object to their being called quacks. A man who puts in four years of medical study and then spends one year in a hospital for further training and takes a degree is supposed to be competent to practice medicine even if he doesn't know ethics as we look upon them. He may not know how to practice medicine, however, and he may find it more difficult than he expected; and yet he very properly calls himself a doctor, and in time he grows into full manhood and uses his brain with good judgment and is able to take care of the sick.

Dr. Wynne predicted further that unless the conservative attitude of the medical profession is abandoned and more radical thought injected, graduates of medical schools will be turned out with limited licenses "to compound pills, handle only inoculations or certain diseases." Altogether this attitude of Dr. Wynne's may have an awakening influence, causing the New Jersey Hospital society to think more deeply on the word ethics, but it is openly a question as to whether ethics are used at all or not.

A DOCTOR FOR GOVERNOR

We were very much pleased the other day to receive a call from Dr. Eivind Klaveness, a graduate of the University of Norway, a highly trained man, a good surgeon capable of giving advice that is most trustworthy, and who could make a success of the practice of medicine, as shown by his work at Monticello for several years and during the past year in St. Paul.

In a talk before the Women's Republican Club, at the Leamington Hotel on May twenty-first, Dr. Klaveness outlined his policies and evidently pleased his audience very much. He told them that if nominated he would look after the humanitarian side rather than the political

side and give them a clean administration and would do everything in his power to instruct and improve the people.

Dr. Klaveness comes out as a "wet," but until the question of prohibition is definitely settled by the people he will govern himself accordingly. In speaking of his stand on the subject of prohibition he pleaded for "a restoration of honor and respect to the term, American citizen. Most regretfully I now feel that we have suffered an irreparable set back in attaining this glorious right when certain fanatical forces and ill-advised politicians by means of the prohibition amendment succeeded in throwing all of our citizens, good, bad and indifferent, into moral jail in order to carry out, not a 'noble' experiment, but a most costly and psychologically fallacious experiment." He is a man who is brave and unflinching in his attitude, and should be an ornament to the office of governor of the State of Minnesota.

What will the doctors of the state do about this nomination? If one doctor in each town of Minnesota will secure for the candidate five of his friends as voters they can secure the nomination of Dr. Klaveness, and if he is nominated the probabilities are that he will be elected. He may not be as well known as some of our doctors are but he will do his duty by the people of Minnesota and he will be glad to explain his views on public policies in his campaign speeches. Among the high lights of Dr. Klaveness' address before the Republican Women's Club was the repeal of the Minnesota newspaper "gag law," as a threat to the freedom of the press and thus inconsistent with the privileges vouchsafed to all citizens under our bill of rights. He will demand that more laymen and fewer lawyers be state officials and relieve the state from being overburdened with laws for every possible situation on human behavior. He believes, too, in the extension of the state highway system and also the development of the tourist traffic and conservation of the state's resources as one of its greatest assets both as to income and preservation of natural beauties. One of the chief important points, following that of the State of Wisconsin, is the authorizing of a state income tax to prevent very unsatisfactory and illogical personal property taxes. Then, too, he has an idea for the creation of the state system of old-age pensions providing for the care of every needy citizen past seventy years of age.

CORRESPONDENCE

THE DIAGNOSIS OF GASTRIC DISEASE

Editor of JOURNAL-LANCET:

SIR:

Ever since reading the article by Dr. Arthur Hertzler in your issue of April 15, 1930, entitled "A Country Doctor Takes a Look at Stomach Complaints" I have been trying to restrain myself from "writing to the papers," the chief occupation of every swivel chair philosopher. Nevertheless the teaching there is so pernicious, so destructive of all that we have tried to build up in the past years, so far from the truth, that I cannot refrain from comment.

I have too much respect for Dr. Hertzler's eminence as a surgical authority and for his seriousness of purpose, to believe that his criticism of modern diagnostic procedures was merely an attempt to be witty, although it is difficult to take many of his statements seriously. There is a sarcastic and humorous note throughout the article, and for a time I tried to convince myself that his classification of stomach disorders, his methods of distinguishing them from each other, his dismissal of gastric analysis, and the rôle to which he assigned the X-ray diagnosis of gastrointestinal conditions were all part of the joke. Having discussed the article with some of my colleagues, I find that, intended or not, it is all being taken seriously, even oracularly.

There is no doubt that we would all like to feel that we can with a piercing glance of the eye and a few carefully chosen questions determine whether organic gastric pathology is present and of what type. And it is certainly true that, in some cases, this can be done. But are we to go backward twenty-five years and diagnose ulcers only when retention is present? This is what Dr. Hertzler is doing if we are to take his statements seriously. At the University Hospital, for example, less than ten per cent of our ulcer cases show real retention. Are we to go back to Richard Cabot's figures in which by a method similar to Hertzler's but much more intensive and backed up by some laboratory work at least, only 50 per cent of the clinical diagnoses were correctly made? Dr. W. A. O'Brien tells us that our autopsy records at the University Hospital indicate a pre-mortem

diagnostic accuracy of 85 per cent. Is that worth while even if it costs the patient more money, even if many patients are unnecessarily examined?

In the section on "organic disease" there are two statements which are so unconsciously illuminating that I cannot help discussing them in detail. Referring to the X-ray examination for the diagnosis of ulcer, Hertzler says: "The X-ray is indispensable to determine the degree of retention. *Sometimes* (italics mine) an ulcer can be demonstrated." Dr. Hertzler is evidently blissfully unaware of the studies published from the Mayo Clinic and the Massachusetts General Hospital indicating that gastric and duodenal ulcer can be correctly diagnosed in approximately 95 per cent of the cases and long before they have arrived at the stage of gross gastric retention. Merrill's figures which appeared in the *American Journal of Roentgenology* for October, 1925, are particularly illuminating as regards a comparison between the diagnostic accuracy of purely clinical methods and the Roentgen examination. They reveal how truly difficult it is, by means of history and physical examination, to determine which patients have organic disease of the stomach and of what type.

The last lines in the same section are even more illuminating. Referring to cancer of the stomach, Hertzler says: "They have the cancer look; that far-away, serious look that is prophetic." Using his methods of diagnosis I have no doubt that gastric carcinoma patients will already have the look of impending death by the time the disease is recognized. But it hardly takes an experienced surgeon to diagnose the signs of impending dissolution when cachexia has already appeared. If any hope is ever to be held out for the increasing number of the population who are becoming the victims of gastric cancer, it must be through early diagnosis long before the appearance of a "prophetic look." There is only one method by which this can be done and it is not as simple or easy as looking the patient over and inquiring as to his weight. The patient must have a complete examination with especial emphasis upon the stool, blood, gastric analysis and, most important of all, a competent X-ray study. This means inevitably much unnecessary expensive work on many patients, but if you or Dr. Hertzler or I were to have a gastric carcinoma, the diagnosis of which had been too long delayed because of the fear of doing unnecessary work or producing

unnecessary expense, I am sure we would all feel like protesting as vigorously as I have against this erroneous teaching.

LEO G. RIGLER, M.D.

Minneapolis, May 9, 1930.

NEWS ITEMS

Dr. and Mrs. G. E. Brown, Rochester, have returned from a four months European trip.

Dr. E. C. Gaebe, Carpio, N. D., has left that city and taken a position at a leading clinic, at Gary, Ind.

Twenty-three nurses were graduated from the training school of St. Luke's Hospital, Fargo, last month.

Dr. J. F. Quinn, Florence, S. D., has moved to Humboldt, S. D., where he will continue in general practice.

Dr. E. R. Crow has moved from Minneapolis to Arlington, Minn., and will open offices for general practice.

Dr. and Mrs. H. W. Froehlich, Thief River Falls, Minn., will spend several months touring Europe this summer.

Dr. C. R. Christenson, Starbuck, Minn., has recently moved to Minneapolis, where he will open offices for general practice.

Dr. E. E. Zemke, formerly of Duluth, is now located at Fairmont, Minn., where he is associated with Drs. F. N. and R. C. Hunt.

The annual meeting of the Great Northern Railway Surgeons Association will be held this year at Fargo, with a two day session.

Dr. R. W. Campbell, formerly located at Bisbee, N. D., has moved to Cass Lake, Minn., where he will continue in general practice.

Dr. C. N. Callander, Fargo, for many years a practicing physician of that city, has moved to San Francisco, where he will make his future home.

Dr. M. J. Fiksdal, Willmar, Minn., is off for a three months vacation in Germany, Denmark, and Sweden. Mrs. Fiksdal and son are with him on the trip.

Drs. J. M. Walsh, R. J. Jackson, N. T. Owen, H. J. T. Ince, and F. G. Gilbert, all leading physicians of Rapid City, S. D., have organized the Midwest Clinic, of that city.

Dr. W. A. Wright, formerly of Grenora, N. D., is now located at Williston. Dr. Wright has just completed four months postgraduating work in surgery at New York.

A new \$250,000 St. Mary's Hospital was dedicated at Aberdeen, S. D., last month. Rt. Rev. M. B. Weber was in charge of the ceremonies, and addresses were made by Gov. Bulow, and Mayor Hipple.

Dr. John Aiken Sweat, Great Falls, Montana, died last month, aged 74 years. He was for many years president of the State Board of Medical Examiners, also a prominent member of the state legislature.

Eighty-seven University of Minnesota medical students working for the degree of doctor of medicine will start their seventh and last year of training on July 1st when they begin serving 12-month internships.

The annual meeting of the Chicago and Pine County Medical Society was recently held at Pokegama, Minn. Dr. F. F. Callahan was elected president and Dr. J. C. Hultkrans, Rush City, secretary and treasurer.

F. Manley Brist, investigating attorney for the State Board of Medical Examiners, addressed the Blue Earth Valley Medical Society at Fairmont, May 1, on legal functions and responsibilities of the State Association.

Dr. F. V. Willhite, superintendent of the State School and Home at Redfield, S. D., was among the speakers at a recent meeting held at Washington, D. C. His topic covered the care of the feeble-minded and mental defective patients.

Dr. and Mrs. M. A. Kiefer, Sleepy Eye, Minn., are with a party of prominent physicians who will spend several months touring the leading European cities this summer. Part of the time is devoted to postgraduate, medical and surgical work.

The annual meeting of the Montana State Medical Society will hold a four days session at Butte, on June 30-July 3. A very attractive program has been arranged and the largest attendance in the history of the society is expected to be present.

Dr. Olaf E. Krogstad, aged 68 years, a practicing physician of Minneapolis for the last 30

years, died at his home on Wednesday, May 14. He was born in Trondhjem, Norway, and came to this country in 1883 and graduated from the Vermont Medical School.

Inaugurating an annual custom, about 100 Twin City physicians, members of the Minnesota Academy of Medicine, gave a dinner in the Minnesota Club recently honoring the founders of the academy. Dr. Emil S. Geist, of Minneapolis, is president of the organization.

The May meeting of the Scott-Carver Medical Society, held at New Prague, Minn., brought out 25 members who were very much interested in the address of Judge C. M. Tiftt, Glencoe, on "Medical Jurisdiction." Dr. F. H. Westerman, Montgomery, is president of the association.

A survey of the ages of members of the State Association in three classifications is under way at Association headquarters under the direction of E. A. Meyerding, executive secretary. The first group will include those under 40, the second those between 40 and 60 and the third those over 60.

The annual meeting of the Redwood-Brown Counties Medical Association was held at New Ulm, Minn., last month. The usual business meeting was held, a fine banquet served, and several valuable and interesting papers were presented. Dr. G. F. Reineke, New Ulm, is president of the association.

One hundred and fifty members of the Minnesota Hospital Association held their annual meeting at St. Paul last month. Many papers were presented and discussed. Reports of officers and the evening banquet completed the program. Dr. J. J. Drummond, Rochester, is president of the association.

Materials for lay talks on sex hygiene, diphtheria, and child health, and for a nurses graduating exercise were sent from State Association headquarters to members last month. This service is available to any member upon request. Address Minnesota State Medical Association, 11 W. Summit Ave., St. Paul, Minn.

Dr. J. E. Schneider, Bowman, N. D., one of the most prominent leaders in the medical profession for the past 25 years, passed away last month at the advanced age of 86 years. Dr. Schneider has been active in the work of the State Medical Association during the past 40 years and served as president, secretary and many honored offices of the association.

Six Rochester physicians were in attendance at the meeting, recently held in Philadelphia, of the American Surgical Association—Dr. W. J. Mayo, Dr. E. S. Judd, Dr. D. C. Balfour, Dr. F. W. Rankin, Dr. J. R. Learmouth, and Dr. S. W. Harrington. Dr. Judd and Dr. Balfour read papers on ulcers and Dr. Rankin and Dr. Learmouth presented papers on sympathetic nerves.

Officers of the State Association addressed a special meeting of the Freeborn County Medical Society, at Albert Lea, Minn., on the way back from the 1930 convention of the Iowa State Medical Association, May 15. Dr. S. H. Boyer, president, Dr. E. A. Meyerding, executive secretary, Dr. Herman Johnson, and F. Manley Brist, attorney for the State Board of Medical Examiners, were in the party.

Dr. S. Dulude, Dassel, Minn., was recently elected president of the Meeker County Medical Society. Dr. K. A. Danielson, Litchfield, Minn., will be secretary and treasurer; Dr. A. W. Robertson, Litchfield, will be delegate; Dr. H. E. Wilmot, Litchfield, will be alternate, and Dr. D. C. O'Connor, Eden Valley, Minn., and Dr. A. W. Robertson, Litchfield, will serve as board of censors for the Society.

The 1930 medical short courses offered under the auspices of the Minnesota State Medical Association and the University of Minnesota Extension Division are under way in five Minnesota cities. Wadena and Faribault began their courses the week of May 12. They are the latest to book them. Willmar, Brainerd and Winona opened their series in April. The State Association meeting took place in Faribault, May 19, and in Wadena, May 23, with executive officers of the Association in charge of both. The tuberculosis meeting, arranged by the Minnesota Public Health Association, was held in Faribault, May 26. It is scheduled for Wadena, June 6. Programs devoted to cancer, obstetrics, heart disease, arthritis, hospital management and other subjects chosen by the individual county medical societies sponsoring the courses are scheduled.

MISCELLANY

GRANITE FALLS' WOMAN GIVEN JAIL SENTENCE FOR VIOLATING BASIC SCIENCE LAW

Maries Pederson, 42 years of age, residing at Granite Falls, Minnesota, entered a plea of guilty

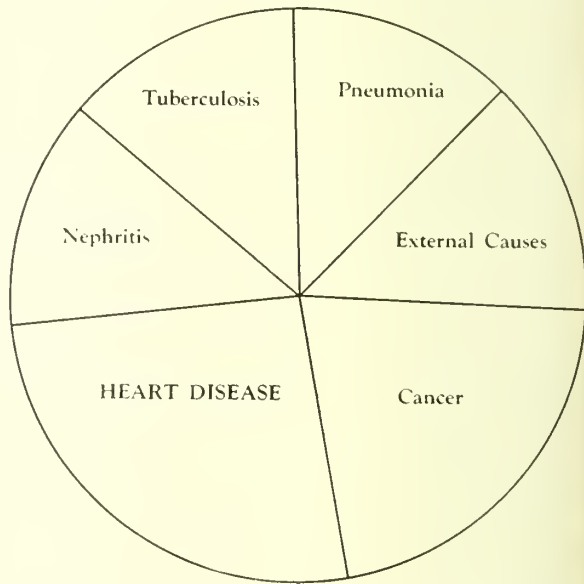
to practicing healing without a basic science certificate.

Mrs. Pederson has been at Granite Falls intermittently for the past four years. She maintained an office in her living quarters on the East side of the River in Chippewa County. She was popularly referred to as the "Iodine Nurse." Several complaints were made to the State Board of Medical Examiners in reference to this defendant. After an investigation by Mr. Brist on behalf of the Board, she was arrested and entered a plea of guilty. The Court sentenced the defendant to a term of 90 days in the Chippewa County jail, and placed the defendant on probation upon the condition that the defendant absolutely refrain from practicing healing in this state. The defendant's home is at Brandt, South Dakota.

Before sentencing the defendant, Judge Baker exacted a promise from the defendant concerning her conduct in the future, and made it very plain to the defendant that she would serve every day of her sentence if she attempted to practice in this state in the future.

STATE DEPARTMENT OF HEALTH
Division of Vital Statistics
MINNESOTA

Six Leading Causes of Death, 1924 to 1928, inclusive



Disease	Deaths	Per cent of all Deaths from all causes
Heart Disease	20,408	16.14
Cancer	13,720	10.85
External Causes	10,370	8.20
Pneumonia	9,134	7.22
Tuberculosis	8,017	6.34
Nephritis	7,516	5.94
Total	69,165	54.69

Deaths all causes (5 years) *126,414

*Stillbirths not included in total.

SIXTH ANNUAL CONFERENCE

The Sixth Annual Conference of North Dakota Health Officers Association, held recently at Grand Forks, passed the following resolutions:

"WHEREAS, the rural communities are not receiving such public health protection as the urban community and this is economically impossible under present laws, the Health Officers Association hereby adopts the following

RESOLUTION

"BE IT RESOLVED, that the public health laws of North Dakota be so modified as to make it possible for one or more counties to unite and form a taxing unit for the purpose of providing a full time public health organization for such units, and

"WHEREAS, there has been a steady increase in mortality from all kinds of accidents but more especially from automobile accidents,

"BE IT RESOLVED, that this Association cooperate with the Safety Council of the State in a campaign of education and the adoption of such measures as are necessary for the reduction of this needless sacrifice of human life.

"BE IT FURTHER RESOLVED that the Medical Society of North Dakota be urged to continue its campaign for the protection of public health, prevention of communicable diseases, and annual physical examinations.

"BE IT FURTHER RESOLVED, that this organization urge the cooperation of all agencies in providing safer milk supplies for the citizens of North Dakota, and that we believe that clean milk properly pasteurized provides the safest milk for human consumption."

DIFFERENTIAL DIAGNOSIS OF THE CAUSES OF UTERINE BLEEDING

Bleeding from the uterus may arise from general bodily illnesses or local pelvic causes.

Of the former the most outstanding are the blood diseases, especially the leukemias; endocrine diseases, notably those of the ovary and thyroid; cardiac disease, primarily when complicated by passive congestion; and renal disease when associated with hypertension or toxemia secondary to retention of waste products.

The local pelvic causes resolve themselves into trauma; infections, formost of which are syphilitic, tuberculous and pyogenic; pregnancy; and neoplastic diseases, benign and malignant.

In diagnosing the cause of hemorrhage, an accurate history may give leading clues, especially in grouping symptoms such as pain and bleeding, or amenorrhea followed by bleeding. A thorough and complete physical examination helps in analyzing the influence of any disease of other organs such as thyroid, heart, blood, etc.; and in determining loss of weight. Urinalysis establishes the relation of the kidneys to the illness: Blood study is essential to rule out blood diseases, or observe the extent of

anemia and other factors derived from hematologic investigation. The pelvic examination is perhaps the most vital of all in localizing the most common causes—local pathology.

When considering uterine hemorrhage, think first of pregnancy (uterine or extra-uterine) or neoplasm (benign or malignant).

D. H. BESSESEN, M.D.

THE JOHN PHILLIPS MEMORIAL PRIZE

The American College of Physicians announces the **John Phillips Memorial Prize** of \$1,500.00, to be awarded for the most meritorious contribution in Internal Medicine and sciences contributing thereto, under the following conditions:

(1) The contribution must be submitted in the form of a thesis or dissertation based upon published or unpublished original work.

(2) It must be mailed to the Executive Secretary of the American College of Physicians on or before August 31, 1930.

(3) The thesis or dissertation must be in the English language, in triplicate, in typewritten or printed form, and the work upon which it is based must have been done in whole or in part in the United States or Canada.

(4) The recipient of the prize would be expected to read the essay at the next annual meeting of the college, after which he would be officially presented with the prize by the president.

(5) The college reserves the right to make no award of the prize if a sufficiently meritorious piece of work has not been received.

(6) The announcement of the prize winner will be made not later than two months before the annual meeting.

E. R. LOVELAND,

Executive Secretary,

133-135 S. 36th St., Philadelphia, Pa.

CLASSIFIED ADVERTISEMENTS

For Sale

Type G-P, Fischer portable diathermy, in good condition. Will sell for \$100.00. Address 723, care of this office.

Physician Wanted

Recent graduate, single, one who is interested in pediatrics and medicine. Salary \$200.00. Address 724, care of this office.

Position Wanted

Graduate nurse would like position in Minneapolis doctor's office. Alice Collins, Kenwood 2045 or 1417 La Salle Ave., Minneapolis.

Locum Tenens Work Wanted

Physician, age 35, competent in medicine and surgery, available for summer or any part of it. Address 725, care of this office.

Office for Rent

Excellent location for physician and dentist in modern fireproof building. Rent very reasonable. W. D. Kregel, 2180 Marshall Ave., St. Paul, Minn.

Registered Nurse

Desires position in Minneapolis physician's office. Experienced in typing. Good references. Address Viola Nielson, 625 East 14th Street, Minneapolis, or call Main 2901.

Technician at Liberty

Woman, 31 years old, would like position in small hospital, clinic or doctor's office, as laboratory and X-ray technician. Can furnish good references. Address 722, care of this office.

Practice for Sale

Minnesota, unopposed. South Dakota, Iowa. Positions wanted, Roentgenologist and electro-therapist, experienced. Surgical assistant, associated or resident. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Wanted

A young, single, Catholic physician to assist, with view of partnership, in a well established practice with hospital facilities, in Southern Minnesota. An exceptional opportunity for the right man. Give references in first letter. Address 717, care of this office.

For Sale

200 volumes of medical books, like new, including Nelson's Encyclopedia. Everything physicians need in surgical instruments for general practice. If interested write to Grace G. Berkness, Administratrix, Estate of Dr. Walter G. McMurtry, Wolford, North Dakota.

Technician Wants Location

Technician wants X-ray and Laboratory position. Competent young lady with three years experience in X-ray and laboratory work desires position in doctor's office or community hospital, in Minnesota, North or South Dakota. Two years nurses training. Some knowledge of physical therapy. Best references. Address 718, care of this office.

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FALLACIES IN THE TREATMENT OF RECTAL DISEASE*

BY HAROLD E. HULLSIEK, M.D., F.A.C.S.

Miller Clinic

ST. PAUL, MINNESOTA

Just why the diagnosis and treatment of rectal disease should be deemed worthy of only minor consideration by the average physician is difficult to understand. That such is the fact, I believe is borne out by the notoriously bad reputation which exists in the lay mind of surgical procedures in this area. Most laymen and many doctors feel that they would sooner submit to a laparotomy or a thyroidectomy than to a rectal operation. Why an apparatus so agreeably useful in health and so tragically disagreeable in disease is held in so light regard I am at loss to explain, nevertheless, such must be the case or there would be more study and less misinformation concerning the subject. There are probably more fallacies extant in connection with the pathology of the anal orifice than with that of any other region in the body, the correction of which would undoubtedly lead to a higher standard of work and a greater degree of comfort for the patient.

In the examination of a patient suffering from a rectal ailment one must keep uppermost in mind the thought that the individual has his pathology in a site about which he is necessarily apprehensive, which is very likely to be tender

and painful, and the examination of which affords even a normal individual a disagreeable sensation. Let us then make our patient as least as comfortable as is possible under the circumstances. This end is *not* attained by having him stand and bend over a chair or table with his thigh muscles and buttocks tense, his sphincter spastic, and every muscle in his body contracted. Lying on a comfortable, padded table with some degree of muscular relaxation, there is some opportunity of making a worthwhile examination. Ninety-nine per cent of all patients who are comfortable, draped, and relaxed can be examined with comparative comfort if the gloved finger is inserted *slowly* and *well lubricated*. Hirschman in his diseases of the rectum states "The posture of a patient for digital examination is very important. The old method of having a patient simply bend or lean over a table or chair is absolutely to be condemned!"

The same percentage of patients may be satisfactorily examined through a speculum if the proper type of speculum is used; the old type of bivalve, flat bladed rectal speculum is a barbarous instrument and has no place in the examination of the anal canal. The anal orifice is a fairly circular opening and there is no reason

*From the Miller Clinic.

for even the most optimistic physician believing that he will ingratiate himself with his patient by inserting into it a table knife, even though it have dull blades. Any one of a half dozen tubular, conical pointed specula may be used effectively and comfortably.

There still persists a belief in the fairy tale that hemorrhoids can be diagnosed by a digital examination alone. Montague says: "There are some who claim they can diagnose the presence of hemorrhoids by the insertion of a finger into the rectum and the palpation of the rectal and anal walls. This claim is not made so fully by those of us who confine our practice exclusively to rectal disease, and I for one would never make a diagnosis of hemorrhoids solely on digital examination." Piles being soft, vascular tumors, are promptly collapsed and obliterated on being compressed between the examining finger and the sphincter, and unless the seat of inflammatory or fibrotic change, cannot be felt. Obviously external hemorrhoids can be seen, as may be internal hemorrhoids which prolapse, but those which remain *inside the anal canal can be diagnosed only with the anal speculum.*

Continuing the discussion of examination procedures, let us consider anal fissure. Here we have one of the most painful conditions for which it is necessary to make a rectal examination. If we listen attentively to the patient's history a fissure will be suspected in nearly every case where it proves to be present on examination. The condition being an extremely painful one, the utmost gentleness should be used where it is suspected. Ordinarily digital examination is not necessary to confirm our suspicions, especially if we keep in mind the fact that ninety-five per cent of fissures occur in the posterior commissure, and look in that location. A fissure almost invariably has as a marker of its site a sentinel tag or pile, and spreading of the nates, and separating the anal orifice slightly will reveal the fissure.

It might be pertinent while on the subject of the anal orifice to mention the so-called external thrombotic pile, which, however, is not a pile at all, but simply a ruptured vessel with the resultant clot and subsequent inflammation and swelling. This condition, of course, is self-limited and if not painful need not be considered, since those which give no discomfort ordinarily are not brought to the attention of the physician. If it is painful let us consign to the dump heap all the old-time ineffective and useless salves and ointments and apply a line of treatment that ac-

tually relieves the condition. Incision of the mass using a few drops of novocaine, and removal of the clot, removes immediately the better part of both pain and pathology.

Concerning the symptom of rectal bleeding, it may be said very emphatically that the determination of the presence of bleeding piles does not end the duty of the physician to the patient. All rectal bleeding should be looked on as a symptom of malignant disease until proved otherwise. In a series of 25 cases of rectal polyps I found bleeding to be a symptom in 16 cases. The fallacy of assuming bleeding from the rectum to be a symptom of hemorrhoids is reflected in the statistics of one large eastern hospital, which shows 75 per cent of patients entering that institution for rectal cancer to have been previously treated for hemorrhoids. Jones says: "The medical profession and the laity know that hemorrhoids are the usual cause of bleeding from the rectum. The laity, therefore, delay about going to the physician, who in turn hears the story and says without thought or examination 'hemorrhoids' and delays until the patient's condition is such that he knows there must be something more than hemorrhoids wrong with his patient, and finally, when it is too late, the physician sends the patient to the surgeon, or simply palliates the symptoms, because of his, the physician's, dread of a colostomy." When we have the public educated in the belief that rectal bleeding may mean early carcinoma and awaken them to the necessity for early examination, we shall save many lives. Before we can make the laity believe it we must be alive to the possibilities ourselves.

Hemorrhoids are probably the most common rectal ailment, consequently there are more vagaries regarding their handling than in other rectal conditions. Let us consider suppositories—bushels of them, barrels, tons of suppositories which we annually thrust into defenseless rectums. Montague sums up the situation as follows: "Suppositories in one form or another have been suggested from time immemorial for the relief or cure of hemorrhoids. As to how much value any suppository can have in a condition of varicose veins is certainly a matter open to debate. It is regrettable that they are often prescribed by physicians. Much as I dislike disturbing the venerable dust of such an old-time tradition, yet my regard for the truth is even greater than any sentimental respect for the practice. There is no reasonable ground for the suspicion that suppositories ever cured even a single

case of hemorrhoids. Suppositories have no field of usefulness in the treatment of hemorrhoids."

As to the treatment of hemorrhoids one has a choice of surgical measures or injection. Why the ethical members of the profession have been so slow to adopt the nonoperative method for properly selected cases is hard to understand, unless again it can be attributed to a disinterest in things rectal. The charlatan has been doing it for years. The technique is not difficult. The results are good, but *only uncomplicated internal piles are to be injected*.

If the operative method is selected do not prepare your patient into a state of exhaustion and his intestinal tract into a state of continuous activity by catharsis the day or night preceding operation. A cleansing enema the evening before and the morning of the operation is all that is necessary to render the operative field as clean as it can be gotten, and ordinarily sufficiently so to allow the patient two or three days without a harmful movement, even in the absence of "locking up the bowels" with opium. By enema I mean ordinary tap water or one to which some mild alkali has been added, not soapsuds. Any one who has made a proctoscopic examination following a soapsuds enema appreciates the fact that soapy mixtures do the same thing to the mucosa when put into the rectum as they do to the conjunctiva when put into the eye. All the requirements of an enema are fulfilled when we use bulk and liquid—there is no occasion for making use of an extremely irritating substance. Hirschman says recent studies in America and abroad have definitely proved soapsuds to be provocative of a proctitis. Another point in connection with enemas is the so-called high enema. If there is a high enema, I should very much like to know what a low one is; anyone who has watched barium (and barium enemas are very definitely thicker and less fluid than ordinary enemas) suspensions flow into the rectum, sigmoid, transverse colon and cecum almost as fast as it takes to write about it, realizes the absurdity of queer positions and techniques to arrive at what is reverently termed a high enema. Goldman, in an article entitled "Colon Irrigations for the General Practitioner" says: "The high introduction of the rectal tube to give a high enema is unnecessary; every properly administered enema is a high enema."

The position on the operating table, if the surgical treatment is used, is extremely important, both from the standpoint of the patient and the

operator; certainly the old lithotomy position is about as uncomfortable as any one could devise for a person to remain in for any length of time. From the standpoint of ease of operation it renders the field tense, the muscles spastic, and the field engorged. Its sole redeeming virtue is found in the fact that it allows the surgeon to operate sitting down. The prone or Sims' position is comfortable, allows the patient to relax and certainly is more dignified, if the latter point is to be considered.

In the actual operation, whether using local or general anesthesia, the attainment of proper exposure is of paramount importance. I personally prefer local anesthesia to general, and use it almost universally in rectal work, but in neither case do I divulse the sphincter. In local anesthesia it is *never necessary*, and in general, if relaxation isn't complete a few c.c. of novocaine injected directly into the sphincter accomplishes without harm all the finger will do by divulsing. Henschran says: "Dilatation or divulsion of the sphincter muscles is never necessary in any ano-rectal operation." The divulsion of the sphincter undoubtedly contributes measurably to post-operative discomfort.

The practice of administering a drastic cathartic three to four days following a rectal operation I believe is not only unnecessary but provocative of complication. If the patient has had morning and evening doses of agar and oil or mineral oil beginning the first day, and a fairly substantial diet, the bowels move without assistance in a majority of cases on the second or third day. One of the most persistently believed fallacies is that the first bowel movement must be exceedingly painful. With a proper operation, gently handling of tissue, and proper after care, this should not be an ordeal, and should be gotten over fairly early, for in spite of reassuring remarks on the part of the physician the patient continues to look forward to it with dread until it is accomplished.

In the treatment of abscesses about the rectum and anus it seems to me that students should be taught not that abscesses in this region are very prone to develop fistulæ, but that if they are treated properly they are very unlikely to develop sinuses. It is a queer fact but a true one nevertheless, that almost every fistula one operates on has a history of an abscess which was "lanced" and then subsequently refused to heal. Perianal and perirectal abscesses have the faculty of forming fistulæ if they are treated like most other abscesses, but being unlike other ab-

cesses should not be treated like them, and conversely will not form fistulae. The main reasons for failure to cure such an abscess are insufficiently large incisions and poorly placed incisions. The incision should be longer than the broadest part of the abscess, parallel to the sphincter instead of radiating, and so far as I personally am concerned should have some of the skin edges of the wound removed to delay closure.

The above remarks are offered as constructive criticism and in an earnest endeavor to convince the general practitioner that it is entirely

within his skill to raise the standard of his own proctologic work and that of rectal work in general, if he will only give a very small amount of time and thought to a consideration of a few fundamental principles.

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VINCENT'S INFECTION FROM THE DENTAL STANDPOINT*

BY BENJAMIN SANDY, D.D.S.

MINNEAPOLIS, MINNESOTA

Vincent found evidence that the disease appeared during the French Revolution and later during peace times in garrisons and on board naval vessels.

Grieves¹, in 1919, raised the question whether scorbutus in its earlier depredations in maritime life would not have yielded the same bacteriological results.

Conjecture upon the cases of this infection, which were earlier diagnosed as diphtheria, syphilis and dental periclasia, would not avail.

Our interest is in this sequela of the World War, so-called "Trench Mouth", which under certain environment assumes epidemic proportions and undoubtedly is only recognized in a small percentage of cases.

Mack² well says: "It is judged to be of sufficient interest and urgency—at the risk of repeating much previously offered—to call to mind the necessity for its early recognition and treatment, its control as a disease that is communicable, and the use of any measures that will prevent its incidence. In general, it is felt that the seriousness of the disease from a purely dental, as well as a systemic standpoint, has not been appreciated. The loss of the interdental gingival crest, with its supporting alveolar process, that all too frequently occurs incidental to a severe attack, is a permanent condition that results in dental periclasia—less properly, but more com-

monly, called 'pyorrhœa alveolaris.' This means the eventual loss of many otherwise useful teeth, to the permanent impairment of the masticatory apparatus, and a consequent effect on the general health of the patient throughout his after life."

The terminology adopted by the committee on nomenclature of the American Dental Association will be employed in this paper, viz., Vincent's infection will include the lesions in the oral cavity and Vincent's angina refer to the condition posterior to the fauces.

First a word picturing the normal investing tissue of the teeth. The gingiva,³ sometimes termed the free margin of the gum, encircles the neck of each tooth as a cuff about one millimeter deep in adult life; this tissue internally is continuous with the periodontal membrane, which encapsulates the root of the tooth. Externally, at the level of the bone process, without demarcation, it merges into the gums with their attachment to the periosteum. The gums extend to the reflection of the mucous membrane. The gum as a term is frequently but erroneously applied to all the soft tissue surrounding the tooth.

In health the gingiva presents a beautiful pink color, hugging closely the enamel surface. Inured by the massage of hard foods, it is of very dense structure and has high resistance to attack, either traumatic or bacterial.

However, under modern living conditions, soft foods, etc., the gingivæ lose their tone. As evidence, during the Spanish-American War,

*Read at the meeting of the American College of Physicians, February, 1930.

when it became necessary to feed our forces on freshly slaughtered beef, the mouths rebelled, the teeth became tender and the soft tissue inflamed by a food which would have been routine with their grandsires. This would lend credence to the belief that Vincent's is a disease of modern life, barring earlier sporadic outbreaks during periods of stress or following diet deficiency.

On the assumption that the following speaker will present the bacteriological findings this paper will touch but lightly on that phase. Tunicliff⁴ presented a strong opinion that the characteristic organism, the fusiform bacillus and the spirillum of Vincent, more modernly described as the "fusiformis dentium" and the "Borrelia Vincenti,"⁵ were variant forms of the same bacterium. The weight of belief, however, does not subscribe to this view. Both organisms may be found in the healthy mouth but highly attenuated. Formerly they were considered causative but more recently are thought to be secondary to a primary invader.

ETIOLOGY

Irrespective of the systemic causes which may be underlying, the great cause locally is irritation of the membranes with the resultant loss of tone, paving the way for bacterial invasion. It is probably true that in epidemics, where the rapid passage of the etiologic organisms from host to host has increased their virulence, the healthy, clean mouth may be attacked. Nevertheless, where minute examination reveals no irritated gingivæ nor pockets about the teeth, the disease is rarely seen. This irritation is most frequently caused by neglect, uncleanliness of the mouth, with accompanying deposits of calculus and sordes.

Additional factors are smoking; traumatism from rough enamel margins in extensive caries; residual roots; poorly fitting crowns, bridges and fillings; as well as semierupted teeth. Contributing causes are Vincent's angina, the use of tooth picks or dental floss, metallic poisoning, including the administration of mercury in syphilis, and blood and diet deficiency diseases. Amalgam fillings, formerly so much used, when in contact with the gingivæ, always produce a low grade inflammation.

In the subacute and more insidious cases, the condition is frequently superimposed upon a dental periclasia (pyorrhea alveolaris). Pockets between the teeth show characteristic loss of bone and yield rich smears of the organisms.

The condition is so common among those un-

dergoing syphilitic treatment that one writer,⁶ after an internship in a hospital at Hot Springs, Arkansas, ventured the opinion that there was always a relationship between the two diseases. Post hoc, ergo propter hoc. This viewpoint, however, would appear quite untenable.

It is nevertheless true that when mercurial treatment is followed and deposits of calculus or traumatizing dental restorations are present, the ensuing stomatitis is extremely inviting to the infection.

It may be more than coincidental that the frequency of incidence has kept pace with the consumption of cigarettes, with their resultant irritation to the membranes. While smoke from cigarette or cigar has marked bactericidal power, in this lesion the process is protected by the layer of slough.⁷ The Commissioner⁸ of Internal Revenue, on the basis of the sale of stamps, says that in 1910 seven billion cigarettes were used in the United States; in 1929, 114 billion.

Hirschfeld⁹ says the increased incidence may be due to increased kissing habits among young folks.

In addition, physicians and dentists diagnose the cases more readily and subacute war cases are recurring.

Moreover, patients, through the popular advertisements featuring "four out of five after 40," "pink tooth brush" and other catch phrases, are becoming "gum conscious" and present themselves more frequently.

Often in assumably well cared for mouths, pyorrhea pockets, which have not been obliterated and from which rich strains of the organisms may be secured, act as foci. These may reinfect the contiguous membranes after protracted physical or mental strain, or as an aftermath of influenza or other illness.

From this standpoint, the semierupted third molar may be considered a frequent offender; often the gingivæ almost encapsulate the tooth crown, and since there is no attachment between gingiva and enamel, a cul-de-sac exists which is an ideal culture bed. Here the organisms lie latent and may later infect the adjacent structures.

As an evidence of the importance of mouth hygiene in this condition, the cases in private practice are usually of the milder type, affecting only the gingivæ, although even in such types they may be followed by loss of the papilla and bone crest between the teeth, producing a permanent mutilation. In public clinics, where the individual is frequently a stranger to mouth care,

are seen the severe cases, great serpiginous ulcers involving gingivæ, gums, and occasionally buccal, palatine, and lingual membranes, accompanied by fever, malaise and nauseating fetor. This is another way of saying the condition varies in virulence inversely with the health of the gingivæ.

Keilty¹⁰ says: "Gingivitis is an entity as far as it is an inflammation . . . of the investing structures of the teeth. Primarily its management is purely a dental problem, but also, primarily, its recognition as one of the foci of infection and its infectious relationship to other parts of the body are medical problems.

"From the standpoint of a portal of entry for microorganisms, the unprotected inflammatory gingival sulcus offers one of the most prolific sources of infection in the body."

As to the importance of that sleeve of soft tissue surrounding the tooth, called the gingiva, in the causation of the disease, Bloodgood¹¹ says: "I have never found the organisms of Vincent's angina in the edentulous mouth. Apparently the organism can exist, primarily of course, only in the crevices about the teeth and as a rule one does not often see Vincent's angina when the teeth are clean and smooth, when only the enamel is exposed, when the gums have not receded and when pyorrhea is absent.

"Whenever there is a benign or malignant lesion of the mucous membrane leading to an ulcer, Vincent's angina may be a secondary invader.

In consideration of the seasonal variation in the disease, Rickord and Baker¹² at the base hospital, Camp Devens, Mass., showed the highest percentage of cases in the months of February and March and the lowest percentage from May to July. These conclusions were corroborated by case reports from the Queen Alexandra Military Hospital by the same investigators. This would lend color to avitaminosis as a causative phase, the general condition producing the characteristic spongy, inflamed gingivæ and gum tissue with low resistance to invasion.

PATHOLOGY

The point of invasion is most frequently the papilla of gingival tissue between the teeth, old, imperfectly obliterated pyorrhea pockets, or the crest of the soft tissue forming the before described cul-de-sac of a partially erupted third molar. In early or mild cases, the papillæ of soft tissue between several adjoining teeth are etched off sharply. A greyish pseudomembrane

is present as a result of the necrosis. On removal of this membrane, which easily comes away, there is exposed a raw, bleeding surface. The fetid odor, once indulged in, is never forgotten, although this is only present when the condition has involved considerable membrane. A smear discloses field after field swarming with the organisms. The material for making a slide should be gotten from the depth of the pocket when the gingivæ are involved, as the surface of the ulcer is covered with sordes and detritus. When appearing adjacent to the gingivæ, we are again indebted to Bloodgood¹³ for the picture: "The ulcer never looks like a mucous patch and it never has the ragged excavated edge of the tuberculous ulcer or the induration of the cancerous ulcer." Subgingival destruction is frequently considerable, with irreparable loss of bone supporting the teeth.

Where the condition remains subacute for a long period in pockets about the molars and much bone destruction has occurred, extraction is the only method of eradication. Frequently cases present with a history of repeated attacks of Vincent's infection; almost invariably these are exacerbations of an old condition which has not been eradicated. Pockets harboring the organisms, deposits of calculus or traumatizing dental restorations have been permitted to remain; the gross lesion has been treated but the foci which reinfect and the soft, spongy gum tissues, so inviting to the disease, have been ignored.

SYMPTOMS

In the early acute stage the patient complains of a sore mouth and easily bleeding gums. Vague pains in the jaws may be present. As before described, the interdental papillæ are etched off sharply, leaving the typical greyish pseudomembranes. These are first small dots on the crest of the papillæ, the small septa of soft tissue between the teeth. Fortunate is the case diagnosed and arrested at this time. Pyorrhea pockets are early involved, bleed easily and have reddened and, later, ulcerated margins.

Sometimes the disease is very insidious, existing in pyorrhea pockets with only slight soreness and redness of the surrounding gingivæ over a long period. This type of case, treated as pyorrhea, does not respond until the supplementary treatment for Vincent's infection is used.

When the process involves the papillæ first, it extends from one to another, including several

teeth and forming a continuous gingival ulcer. When ulcers have involved any considerable tissue, systematic symptoms and those of the adnexa appear. After this the ulcers may be confined to the area through resistance of the host and low virulence in the organisms, or, in the counter condition, may spread to several parts of the cavity, gums, cheeks, tongue, fauces, or tonsils. The adjacent lymphatics become enlarged and, in contradistinction to the luetic, are tender. Gilmer¹⁴ says: "Also unlike chancre, in that the ulcers are painful to touch. The contiguous lingual gingivæ become reddened but do not participate in the ulceration." This is probably accounted for by the fact that the lingual gingivæ receive more friction from tongue and food in mastication and, therefore, are in better tone. Always the healthy, firm membrane shows a high resistance to attack.

The patient is sometimes profoundly depressed mentally. Malaise is present, as is a temperature of 102° and above in the severe cases. The fetid odor characteristic is due to the saprophytic bacteria involved. Increased salivation is frequently observed.

Tibbets¹⁵ reported in two years five cases of postoperative tonsillar hemorrhage due to the "organisms of Vincent." The hemorrhages came on suddenly without apparent cause. In all cases there was a tendency to the spontaneous arrest of bleeding at one point, only to have it break out at another and then recur at the original site. While there were no fatalities in this series, one of the patients was rapidly passing into an alarming state of exhaustion before the cause was recognized. The pain and bleeding rapidly subsided under treatment with spirillicides and oxidizing agents.

The question arises whether this operative aftermath would have occurred in the presence of a healthy mouth.

Effler¹⁶ says: "The vicious circle of gums to tonsils and tonsils to gums is too inviting. It is time for greater collaboration between the dentist, the pharyngologist and the pathologist."

TREATMENT

All treatment to date is empirical. This must be true in face of the conflicting and negative opinions as to the etiologic organisms. However, whether the *Borrelia Vincenti* and *fusiformis dentium*, or so-called Vincent's organisms, are causative or only concomitant to a primary invader, the fact remains that the condition readily responds to spirillicides and to

agents liberating oxygen. The latter treatment is based upon the fact that the *fusiformis dentium* and *Borrelia Vincenti* are obligate anaerobes.

Bloodgood¹⁷ advises the use of an oxidizing agent before all treatment of the gums including prophylaxis. This is based on the assumption that the tissues may be harboring enough of the organisms to produce a reaction following trauma.

In my own experience, lavage of the mouth with sodium perborate before and after planing the roots for pyorrhœa, decreases the patient's discomfort on the following day.

It has been our custom for a number of years where multiple extractions were indicated, to have the hygienist thoroughly scale and cleanse all the teeth before operating. This undoubtedly lessens postoperative reaction.

Keilty advises further than this. He says that the use of spirillicides and oxidizing agents to eliminate the gingival inflammation before extraction does away with the necessity of a tooth today and another next week, by eliminating reaction. This would appear, however, to apply mostly where pyorrhœa, complicated with Vincent's infection, is the lesion. In the case of numerous root end granulomata, care must still be taken to avoid overvaccination of the patient.

Use of most of the routine germicides has been disappointing. Caustics are contraindicated, since the organisms are saprophytes. Bichloride of mercury 1 to 1,000, in combination with hydrogen peroxide is much used and quite effective. However, its use seems unwarranted in view of toxicity. The anilin dyes, while effective, are apt to produce lasting discoloration around the margins of fillings, especially porcelains, and in cracks of the enamel. Tincture of iodine is worse than valueless, as it early decomposes, forming hydriodic acid, which is caustic. Ultraviolet rays focussed through a quartz tube have not been helpful in my hands.

The literature on the therapy of the condition is varied and voluminous. The number of drugs recommended is confusing; however, they easily fall into two classifications, the arsenicals and the oxidizing agents. It seems unwise to discuss these at length; hence, the treatment we have used over a period of years will be given.

Readable roentgenograms of all teeth should be made. The patient should be advised to avoid common drinking cups, kissing, et cetera, as the disease is communicable.

Under no circumstances should surgical or

prophylactic work be done until the inflammation is allayed, as any instrumentation is painful and likely to force the infection into deeper tissue. On the third or fourth day after beginning treatment, when the tissues have begun to assume a pink hue, removal of the larger masses of calculus may be carefully done. Not until the mouth is entirely comfortable and, as far as the eye may determine, inflammation has disappeared, should the final prophylaxis be given. Even at that time the organisms may be found in the deeper pockets.

The following procedure has been quite successful. With a large pledget of cotton the ulcers are gently wiped off. This removes part of the pseudomembrane. No effort is made to pick off the necrotic layer from the interstices between the teeth at this sitting as it would be quite painful and is unnecessary. This can however be done on the second day with floss and the atomizer. Lavage of the mouth is then done with 50 per cent hydrogen peroxide, which is both cleansing and therapeutic. Neosalvarsan is then used in either of two ways; the dry powder is applied directly to the lesion, working it well into pockets, or it may be used in solution. If the latter, a solution of .15 gram of neosalvarsan, the smallest size, in one ounce distilled water is applied to the areas by a pledget of cotton about an inch in diameter. The patient is then instructed to use the remaining solution in three rinses, each time holding the liquid in the mouth, vigorously churning it between the teeth for one minute. This procedure is followed once or twice a day until the acute symptoms disappear. A solution of perborate of sodium is prescribed for home use, one teaspoonful of the powder dissolved in three quarters of a glass of hot water. This home treatment is to be used five to eight times a day during the first week, then gradually tapering off to twice a day at the end of the third week and this continued, even in the entire absence of symptoms, until a period of two months has elapsed from the first visit. Where irritation follows the use of the sodium perborate, potassium chlorate saturated solution may be substituted.

This treatment seems quite specific. The patient presenting in severe pain in the morning can usually be assured relief from his distress by afternoon, and well within a week the acute symptoms subside. If the tonsils have become involved, the dentist should collaborate with the pharyngologist.

Neosalvarsan may be injected intravenously,

and some writers claim that alleviation of the condition is much hastened thereby. However, the bulk of opinion indicates that it is unwarranted. Where the lesions occur other than on the gingivæ, Barker and Miller¹⁸ advise the use of ten drops of Fowler's solution on the tooth brush two or three times daily as a prophylactic measure.

There are two cardinal errors, however, usual in the treatment. First, to cease the home medication when the tissues have again assumed a healthy appearance and the patient is comfortable. Smears taken at this time from the deeper pockets may show myriads of the organisms. These may lie quiescent until lowered tone locally or generally enables them to reinfect the gingival tissues.

The second error is in dismissing the patient after the final cleansing of the teeth. In the voluminous literature on Vincent's infection I have been able to find only two writers who refer to instruction of the patient in proper tooth brushing as the last step in the treatment of the case. Both of these dismissed this important phase with a terse remark to the effect that the patient should be taught modern tooth brushing.

It has been shown repeatedly that the molds begin to accumulate around the necks of the teeth within a few hours after their removal. Unless the patient be thoroughly instructed in the method of modern tooth brushing, his efforts at removing these molds are of little avail. As evidence, when the teeth have been thoroughly polished and the patient discharged with glistening tooth surfaces and pink, healthy gingivæ, he will present within a few days after the usual method of brushing and the most conscientious effort on his part, with large areas of tooth structure covered with deposits, indicating that he has failed in scouring these surfaces. On account of the high bacterial content of these molds, more than one half by actual weight, a low grade inflammation of the contiguous gingivæ ensues.

In the thirties, when the degenerative changes begin to appear in the mouth, it is doubly important that all individuals be taught scientific brushing, and particularly so in these cases. In our practice, the method of Charters¹⁹ is followed and we know of no other means by which the tooth surfaces can be kept glistening and clean, and the investing tissues healthy. While this is purely a dental phase, so much can be done for the mouth health, as well as the general health of our patients and ourselves, by proper

brushing, that I feel any consideration of the subject of oral infection would be incomplete without at least a passing description of the modern technique.

WHEN THESE CASES PRESENT AFTER SEVERAL ATTACKS

It has been said that "stimulated gums never have pyorrhoea." This is almost if not literally true. We might paraphrase and say "stimulated gums seldom have Vincent's infection," and we know of no method of stimulation to compare with that of the tooth brush if properly used. A brush with firm bristles, tufted on the end, is preferred. The tuft is invaluable for cleansing the lingual surfaces of upper and lower anterior teeth and reaching under bridge restorations. With the usual brushing, using a long stroke, either horizontal or vertical, scouring effect is exerted only on the high spots of the teeth. If we wished to paint a rough board or remove a viscid material from the cuticle of the nail, a long stroke with the brush would not reach the interstices. Instead a stippling movement would be used. Likewise, in brushing the teeth, since the exposed surfaces are to an extent kept clean by the friction of the tongue, cheeks and food in mastication, our efforts must be to cleanse between them.

With this homely comparison in mind, the brush is placed at right angles to the long axis of the teeth and the bristles forced between them. Give the brush a slightly rotary or vibratory movement, which will enable those bristles that are between the teeth to scour the interproximal surfaces as well as the tooth necks. A long sweep of the brush is to be avoided, for as soon as this occurs the bristles are disengaged from the interproximate space. The brush is then lifted and similar application made to the next area, and so on around the arch. On reaching the lingual surfaces of the upper and lower anterior teeth, the tuft of brush only is used and this is gradually worked into the embrasures until in many cases the bristles can be seen passing through to the labial.

By this method, the sordes and stains can be kept to a minimum and the investing tissues made pink, firm and healthy. Accumulations of calculus opposite the salivary ducts will still occur but to a greatly lessened degree.

After this instruction to the patient, he returns in three days and a staining solution with an iodine base is used. Invariably areas of accumulation untouched by bristles of the brush will be shown. With the aid of a hand mirror,

the patient is enabled to visualize those surfaces which have been neglected. This procedure is followed in several sittings until he shows proficiency, with the resultant clean, glistening surfaces of all teeth. Under this treatment, not only are the gingivæ freed of the irritating effect of the toxins from the bacterial contents of the molds, but the brisk massage produces a firm healthy gingival and gum tissue, highly resistant to bacterial invasion.

Experience has shown me conclusively that where the individual receives regular dental prophylaxis and is taught proper tooth brushing, Vincent's infection is exceedingly rare.

In conclusion, the seriousness of the disease from both a dental and general viewpoint has only recently been appreciated. Much research must supplement our present meager knowledge of its pathology and of the causative organisms.

SUMMARY

Vincent's infection, acute or subacute, is a communicable disease.

Either stage may produce systemic reaction.

Repeated attacks are usually exacerbations of the old condition, which has been subacute.

The lesion responds readily to local treatment with arsenicals and oxidizing agents.

Home treatment should be continued at least a month after cessation of symptoms.

Spongy, inflamed gingivæ and gums should and can be raised in tone by mouth care on the part of the patient.

The patient must return to the dentist for periodic examination.

Dentists, and physicians as well, have been lax in recognizing this condition. The dentist's only function is not the placing of beautiful jewelry on the teeth; the physician, consulted by many who never visit the dentist, has a province which does not end anteriorly at the fauces.

Greater collaboration should exist between the two groups. However, either should accept the responsibility of diagnosis in this condition and be appreciative of its potentialities.

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A STATE WIDE MILK SANITATION PROGRAM FOR NORTH DAKOTA*

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A health department, whether it be a city, county or state unit, is not functioning for the best interests of all the people in that unit when it does not include in its health program the supervision of the milk supply.

One of the objectives of the State Department of Health is to supply the people of North Dakota with safe milk. It must be admitted that in comparison with other lines of endeavor less progress has been made with milk control than in any other activity, and yet milk sanitation is one of the most important. The necessity for a state wide milk sanitation program is made evident by a consideration of the history of milk borne epidemics, and the failure of the majority of the municipalities in this State to undertake the most effective measures for the elimination of such epidemics. Milk is second in importance only to water as a vehicle for the transmission of disease. A public water supply unquestionably reaches a larger percentage of the people than any other single potential disease vehicle, but milk follows a close second. As a city grows larger, its milk supply tends to merge more and more until finally many thousands are supplied from one distribution center such as a creamery or pasteurization plant.

Milk is one of the most important foods and at the same time it is at least potentially one of the most dangerous. From the time it is obtained from the cow to the time that it reaches the consumer's table milk passes through various steps, and this progress, unless controlled, may cause this valuable food product to become a vehicle for frequent outbreaks of disease, particularly if it is remembered that milk is a natural growing medium for certain disease bacteria.

The frequency of milk borne outbreaks is well known. In the year 1924, there were a total of 44 milk borne outbreaks. This number is large compared with the average rate of 18.7 outbreaks per year for the period 1918-1923, or the average rate of six outbreaks per year for the period 1880-1907. It is improbable that there has been an actual increase in the milk borne outbreak rate, but more likely the apparent increase indicates that health office records of 1924 are more nearly complete than the records for the periods just mentioned, or it may be that the health authorities are more active in identifying the outbreaks.

The need for a state wide program of milk sanitation in North Dakota is made evident by the following facts:

(1) North Dakota has a high infant mortality rate.

(2) The Health Department has had frequent requests from city officials for assistance and advice relative to certain problems in milk sanitation.

(3) The Health Department has also had requests from several unofficial civic organizations, such as commercial clubs, P. T. A. organizations, county T. B. units and the like, for information regarding the quality of their respective milk supplies.

(4) Information obtained recently from a questionnaire sent to 88 of the larger towns and cities in this State, shows that only 25 per cent of these towns have ordinances regulating the production, selling and handling of milk products. There are only four cities in the State employing milk inspectors on a part or full time basis.

Most of the cities that have ordinances do not enforce them, and a still greater number have made no effort whatsoever to regulate their

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milk supply. The State Department of Health has already taken steps toward the initiation of a state wide milk sanitation program in North Dakota, by securing the assistance of the United States Public Health Service in conducting a survey, so as to obtain information regarding the present status of milk sanitation throughout the state. A milk specialist has been assigned to cooperate with the Health Department in conducting this survey which will cover about twenty towns in all parts of the state. The survey consists chiefly in the inspection of dairies and pasteurization plants in each community where the survey is undertaken. About half of these towns have been covered up to the present time, and the conditions found show that a large portion of the milk sold in this State is being improperly pasteurized, and a large percentage is being consumed raw or is being milked by milkers and handled by employes who have not been examined for the existence of carriers, and is handled in utensils and sold in containers which have not been effectively sterilized, and that it is kept at a high enough temperature to permit rapid growth of any infection which may have entered the milk. It is easy to understand from these facts why milk outbreaks are apparently as frequent today as they were 25 years ago and also why the infant mortality in North Dakota is high compared with that of other states.

It is evident that some new plan must be tried if the present slow rate of progress in milk sanitation in North Dakota cities is to be accelerated. One of the principal causes for slow progress of milk sanitation in all except a few cities is the lack of organized effort or the lack of leadership. As a result, most cities in North Dakota have attempted to design their own milk legislation and control, and therefore there is now an almost inconceivable confusion of both legislation and control, and as a further result there is at present no real unity of thought as to milk sanitation among health officers in this state. In recent years quite a number of states have realized the necessity of established co-ordination and leadership in milk control, and have adopted standard milk ordinances and have encouraged their cities to pass and enforce them. It is believed that this policy, if properly formulated and executed, will do much to bring about more rapid progress in milk sanitation in North Dakota.

The necessary requirements for a satisfactory state wide milk sanitation program are:

1. Regular and constant state supervision of the city milk ordinance enforcement machinery.

2. An ordinance designed so that the sanitary quality of the milk supply may be gradually improved, without placing undue burden on the individual dairyman or city official; and one that appears to the average consumer as being equitable and fair to all concerned.

3. An ordinance that could be adequately enforced without need for recourse to court action prosecution.

4. The need for adequate state personnel to aid and supervise the local milk inspector.

The need of regulation and constant state supervision of the city milk ordinance enforcement machinery is evident.

The ordinance to be adopted and used in any state wide milk sanitation program should be governed by the following criterion:

1. It must achieve a maximum practicable degree of milk safety.

2. It must encourage greater milk consumption.

3. It must elicit the cooperation of the dairy industry.

4. It must be so framed as to be likely to be enacted, both by small and large cities, cities with little or no previous milk control, and cities with long experience in milk control; cities with a majority sentiment opposed to pasteurization.

In selecting the type of ordinance, it must be remembered it is first necessary to have in mind just what is meant by safe milk. Is the highest grade of raw milk which it is practicable to produce, safe milk? This question must be answered in the negative.

L. C. Frank, Sanitary Engineer of the U.S.P.H.S. and Director of the Office of Milk Investigations, which is the pioneer in milk sanitation work, states that his personal experience in the operation of a certified dairy, has resulted in the firm conviction that no precautions humanly possible are enough to prevent at all times the transmission of disease through raw milk. He further states that employes will frequently have intestinal disturbances and engage in milking or bottling operations before disclosing their condition. They will sneeze into their hands, and even under the most rigid supervision occasionally continue milking without disinfection of their hands. Finally, health examinations, while valuable, cannot guarantee the discovery of all carriers. Therefore, while the safety of raw milk increases as the precautions surrounding it increase, no milk, how-

ever carefully safeguarded, can be sufficiently safe in its raw state.

It is also believed that a policy which abandons production precaution and relies solely upon pasteurization is not sound. There can be no reasonable doubt that pasteurization if properly applied, will prevent milk borne infections. Pasteurization is in this respect certainly superior to raw milk precautions, but on the other hand, the pasteurization process is not always properly applied. It is designed and operated by human beings and slips in operation occur.

Suppose no production precautions were taken and failure in the pasteurization process should occur, our last safeguard would be down and the consumer left defenseless.

Furthermore, a very serious opposition to pasteurization comes from the feeling on the part of the consumer that pasteurization makes it possible for the dairy industry to deliver low grade milk to the plants. It is easy to understand why this should arouse the opposition of the consumer and discourage him in the consumption of milk. He wishes not merely a safe production but also one which satisfies his desire for cleanliness and wholesomeness.

Therefore, with due consideration of all facts involved, it is believed that safe milk is milk which has been both properly produced and properly pasteurized. In other words, grade A raw milk properly pasteurized. By properly pasteurized is meant under regular supervision and in apparatus approved by competent health authority.

It is now possible to approach the problem of the type of legislation most likely to result in the production of a high grade raw milk, most likely to bring about the highest possible percentage of effective pasteurization, and most likely to encourage people to drink enough milk. There are, in general, three types of ordinances in use:

First, an ordinance requiring all milk to be pasteurized.

Second, an ordinance dividing milk into two classes, raw and pasteurized, and limiting the conditions under which each may be produced or sold.

Third, an ordinance dividing milk into two classes, raw and pasteurized and providing for a number of grades in each class.

In view of the above definition of safe milk, it is necessary to consider a state wide ordinance of the first type, which simply states the conditions under which all raw milk must be pro-

duced, and then requires all raw milk without exception to be pasteurized before being sold. This type of ordinance cannot be recommended because it is believed that few North Dakota cities could be induced to pass it. In view of the opposition to pasteurized milk which still exists in many lay minds, a standard ordinance which could be passed by but a small percentage of cities would not accomplish the greatest good for the greatest number.

The second type of ordinance which provides for and regulates both raw and pasteurized milk but does not grade either, is not recommended because it does not provide a great stimulus for the improvement of the raw milk delivered to the pasteurization plant, as is to be provided in the third or grading type of ordinance, which is considered to be the best suited of all three.

This type providing for and grading both raw and pasteurized milk into various classes, is none other than a standard milk ordinance developed and adopted by the U.S.P.H.S., and the type of ordinance recognized by the State Department of Health for adoption in this State.

Under this ordinance, milk is divided into the following classes:

1. Grade A pasteurized.
2. Grade B pasteurized.
3. Grade C pasteurized.
4. Grade A raw.

5. The grades of raw milk acceptable for each of the three grades of pasteurized milk may be defined in this ordinance and termed as B, C and D raw milk.

A grade A rating means compliance with all of a certain list of requirements. All raw milk, whether or not it is to be pasteurized, is graded in accordance with the same standards.

A flexible section in this ordinance which can be modified to suit local conditions, lists all grades that must be pasteurized. The spirit of the ordinance is shown by a foreword which recommends that all cities possible request all grades to be pasteurized.

The grading of pasteurized milk is based partly upon which grades of raw milk are pasteurized. In other words, it is impossible to get a grade A pasteurized milk unless grade A raw milk was used in the first place.

It is believed that this type of grading ordinance will result in the production of a high grade of raw milk supply, including that part intended for pasteurization, because the grading of milk naturally places a premium upon the higher grade and induces a corresponding effort

on the part of the producer. This is a very important consideration as it has often been found that the practice in the past has been to permit high quality milk to be sold raw and to require low quality milk to be pasteurized. This is psychologically wrong. We should pasteurize milk not because it is poor milk but because pasteurization renders any raw milk, however safe, still safer. We should regard pasteurization, not as a means of making safe milk or poor milk, but a necessary addition to all other safeguards.

The modified grading type of ordinance should also result in the maximum percentage of pasteurization, because under this plan all cities which can possibly be induced to pass pasteurization ordinances will have done so, and all other cities can at least be encouraged to permit the sale of milk in the raw state only if it is grade A milk.

Furthermore, even in those cities permitting the sale of grade A raw milk, the constant emphasis of the state and local health departments upon the order of safety of various grades with grade A pasteurized milk leading the rest, cannot fail, as time goes on, to bring about an increase in the percentage of pasteurization.

The grading type of ordinance should also tend to increase the consumption of enough milk. An ordinance which stimulates good quality of milk before pasteurization will result in good flavored milk after pasteurization. Grading milk inspires confidence in the safety of the grade. It is believed people will begin to drink more milk when they begin to like milk and when they begin to have confidence in its safety.

The grading type of ordinance also usually meets the approval of the dairy industry, because it automatically gives grading for effort and money expended. This is considered a strong argument in its favor.

One of the chief arguments in favor of the grading ordinance or standard ordinance is the fact that it can be adequately enforced without recourse to court action or prosecution. A close study of milk enforcement conditions in this State will reveal the fact that in a number of cities items of sanitation required by city ordinances are not being enforced. The reason for this is that if an attempt is made, conviction would not be obtained, and the existing enforcement morale would be even further reduced.

The most practical method of enforcement is the revocation of the permit to sell milk. This is very difficult to enforce because, as a rule,

the dairyman will appeal his case, and the Health Officer may find it difficult to convince a jury that a certain item, such as failure of certain cows not being T. B. tested, or because the floor of the milk room is not clean, or because the milk room is not screened, is sufficient cause for discontinuing the sale of milk.

Under the grading type of standard ordinance, the experience with enforcement is more satisfactory. Under its terms, the Health Officer has the privilege and duty of degrading a dairy or milk plant guilty of several successive violations, and he can require that the lower grade label be carried on the bottle caps. If the offender persists in selling the milk under the higher grade label, the Health Officer is in a position to bring a case for false labeling, and on this charge every American jury will convict.

In general, the standard milk ordinance may be briefly described as containing the following fundamental elements:

First, it defines the farm, plant, and bacteria count requirements for various grades of raw and pasteurized milk.

Second, it requires that the grades of all dairies and plants must be redetermined and announced at least once every six months, and that all grades awarded must be based upon the inspection and analyses made subsequent to the immediately preceding announcement of grades.

Third, it leaves to each community the decision as to which raw grades shall be permitted to be sold raw to the final consumer, but frankly urges as much pasteurization in each community as public opinion will support.

Fourth, it requires that all bottles and other containers must be labeled with the grades awarded by the Health Officer.

Fifth, it provides that cities may forbid the sale of any of the lower grades of milk.

In other words, a city may forbid the sale of all except a grade A pasteurized, without violating the spirit of the ordinance.

Standardization is considered as consisting in the definition of maximum requirements for the various grades and in the urging of the Health Officer of the purchase of the highest grade and the pasteurization of all milk, either at the plant or at the home.

The State Department of Health is convinced of the soundness of the standard milk ordinance, and urges that as many North Dakota cities as can adopt it in its entirety. The State Department of Health will offer all assistance possible to those cities desiring to adopt this ordinance.

In securing the enactment of this ordinance, certain items of policy are suggested:

First, it is unwise to ignore the dairy industry in the passing of milk legislation. The ordinance should not be held out as a device to force the dairymen to do what they would otherwise be unwilling to do, but rather as a device through which dairies can benefit financially in direct ratio to the safety of their product.

The second item of policy is that the dairymen should not be told that the ordinance is being submitted for their vote of approval or disapproval, and that it will be introduced only if a majority vote of approval is secured. Such a policy would place milk sanitation welfare of the consumers more completely in the control of the dairy industry than is warranted.

Third, dairymen should be advised from the outset that if the city in question permits the sale of both raw and pasteurized grades, the Health Department will necessarily take the position that grade A pasteurized milk is safer than grade A raw. If this is not made clear to the dairymen at the beginning, they will have the feeling after the ordinance is in force that the Health Department has misled them, and this should be avoided.

In order to insure effective enforcement of the standard ordinance two prime factors are involved:

First, adequate means of enforcement.

Second, adequate interest on the part of the local health officers.

An ordinance that is not enforced is not worth the paper that it is written on. No city whether it is interested in the adoption of a standard milk ordinance or any other milk ordinance should do so until it can provide the proper machinery for its enforcement.

Adequate interest on the part of the local health officer can not always be taken for granted. In many communities not yet doing milk sanitation work, the local health officer has not been able to take an active part or interest in sanitation work, because of the fact that he has not known of any practical plan which would insure effective results with the means at hand. All too often he has no laboratory service available, and he is also convinced that the occasional field inspection of his dairies does not lead to a satisfactory solution of the milk sanitation problem. Under a state wide milk sanitation program, the State Health Department can do a great deal to awaken the interest of the local

health officer by convincing him that it has a workable plan to offer which has been successful in many other states.

SUMMARY

A state wide milk sanitation program is necessary because milk stands second only to water as a disease vehicle. It has actually caused many epidemics in the past, is still causing many epidemics, and most cities are doing little to prevent these epidemics because of the lack of state leadership. Recently some states have realized the need of such leadership and among these is North Dakota.

The state wide program proposed for this State is the one which was suggested by the U.S.P.H.S., calling for the passage of the standard ordinance in as many towns as it is possible to do so.

There are three types of milk ordinance now in use in the United States, one requiring all milk to be pasteurized; another dividing milk into two classes, raw and pasteurized but not grading either; and a third dividing milk into two classes, raw and pasteurized and providing for a number of grades in each class. A modification of this third type is what is known as the standard ordinance and is recommended for this State. This ordinance starts out by defining safe milk as grade A raw, properly pasteurized. It grades both raw and pasteurized milk, recommends that all communities possible require all raw grade milk to be pasteurized, but if this is impossible, to limit the sale of raw milk to grade A raw. This type of ordinance is considered best because it will through competition result in the production of a high grade raw supply; because it will result in the maximum percentage of pasteurization; because it will encourage consumption of milk; because it will usually meet the approval of the dairy industry, and because it can be enforced without recourse to court prosecution.

Effective enforcement of the ordinance depends upon adequate means for enforcement and upon insuring an adequate interest on the part of the local health officer. Finally, the Health Department is convinced of its soundness and practicability for North Dakota conditions, and urges that the Health Officers of North Dakota assembled in annual conference endorse a state wide milk sanitation program, and go on record as favoring the adoption of the standard milk ordinance of the U.S.P.H.S. as the standard for North Dakota.

COMMENTS ON THE APPLICATION OF THE ABDUCTION TREATMENT OF FRACTURE OF THE NECK OF THE FEMUR

BY ROYAL WHITMAN, M.D.

NEW YORK CITY

I have just received from Dr. Geist a reprint of his paper on the Boehler treatment of fractures, which appeared in the January issue of the JOURNAL-LANCET.

I trust that he will not object if I use a quotation from this as a text for remarks on the treatment of the fracture with which he connects my name, viz: "Boehler uses the classical Whitman method, in spite of its too numerous poor results even in the hands of the best surgeons and orthopedic specialists; the fault probably lying with the method."

It is this last conclusion that I propose to discuss. A method must be judged by its relative efficiency in accomplishing the purpose for which it is applied.

The abduction treatment differs from all others, in that it utilizes natural mechanics to correct deformity and to appose displaced fragments, both in design and execution is strictly in accord with surgical principles.

According to this standard the correction of deformity is of almost equal importance to the secure apposition of the fragments.

The present discussion however is limited to the question of repair of the so-called intracapsular fracture, and now that the abduction treatment has come into general use, statistics are available to demonstrate that bony union, formerly considered a remote possibility, may be attained by this means in by far the larger proportion of the cases. Löfberg, for example, has reported on 176 cases of medical fracture, treated by the abduction method. Union was attained in 67.5 per cent of the cases with a death rate of but 6 per cent (*Zent. f. Chir.*, Aug. 27, 1927). Katzenstein, in a similar number (169) treated by conventional methods reported union in but 11.5 per cent of the cases with a death rate of 17 per cent, results which, according to Axhausen, who discussed the paper, might be considered as fairly representative. *Zent. f. Chir.*, Feb. 11, 1928).

At a recent symposium on the treatment of medial fractures, Anschütz, of Kiel, stated that any other method than that of Whitman was in-

effective and irrational. Mosenthal, of Berlin, said that there could be no discussion of the relative merits of a treatment which had raised the percentage of union 75 per cent, and in his own practice to 90 per cent of the cases. He thought the real obstacle to its general adoption was inability to meet its requirements. (*Medikal Klinik N.* 10, 1929).

These quotations present a conclusion supported by mechanical analysis and by actual results, namely: that as a treatment of fracture according to the standard accepted for all other fractures, there can be no alternative to the abduction method. Furthermore, that the only effective treatment of the fracture is the most conservative treatment of the patient.

One may now consider the cause of what Dr. Geist calls the too numerous failures.

Dr. Geist, after a personal observation of Boehler's work, "has closely followed his directions and used his instruments."

The abduction method has been far less fortunate in both particulars. In a recent paper Schram (*Zent. f. Chir.*, March 29, 1930) describes what he calls the classical Whitman technique and criticises that of Löfberg, whose statistics have been quoted to illustrate the contrast in results as defective.

From personal observation and from the literature I conclude that this criticism has a very general application, and that in many instances what passes as the abduction treatment, except in the attitude of the limb, has little resemblance to the original.

One surgeon evidently considers its application as an ordeal for which the patient must be prepared by preliminary treatment. Another applies it as a supplement to traction, in both instances jeopardizing repair by delay.

One surgeon applies the plaster with the limb flexed to a right angle so that the patient may be placed immediately in the sitting posture. Others are particularly concerned with the danger of compressing the chest, and limit the plaster splint to the pelvis, and, therefore, limit its efficiency.

Others include both limbs in the plaster which is an unnecessary restraint.

Personally, except in my immediate environment, I have rarely seen the treatment conducted to the best advantage of the patient or of the injury, and the results attained under these conditions furnish the strongest evidence of its inherent efficiency.

According to statistics from various sources, failure of union may be estimated at about 30 per cent of the cases treated by the abduction method.

It seems reasonable to assume that in some instances, possibly 10 per cent, failure may be explained by an actual incapacity for repair, and that in others there may be lack of accurate apposition of the fragments which can be assured only by an open operation, a procedure which, except in a very restricted class of cases, is manifestly impracticable.

I conclude, however, that by far the larger proportion of the "too numerous failures" may be attributed not to the fault of the method but to its faulty application, even at the hands of distinguished surgeons and orthopedic specialists.

The abduction treatment has been described many times during the past twenty-five years, but as the exponent of radical reform it has received little consideration in the text books, which represent what is termed the concensus of opinion.

It would appear from the rapidly accumulating evidence in its favor that eventually it must be adopted as a basic routine in treatment. In that event, what may be called the orthodox method, in the sense that it has not been materially changed since its introduction, should serve as a model. This is described at length in the *Annals of Surgery* for January, 1925.

CORRESPONDENCE

THE FORTY-NINTH ANNUAL SESSION OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

This session which was held in Sioux Falls, S. D., May 20, 21, 22, 1930, was well attended. Two hundred forty-three registered during the session.

The State Association was the guest of the Sioux Falls District Medical Society. The Sioux Valley Medical Association held their annual meeting on May 21st, as guests jointly of the State and District organizations.

The scientific program was well received. The local society is to be congratulated on the efficient manner in which it entertained the members, and the type of program delivered. The social activities were ample to meet the most critical. The ladies were well entertained by the local chapter of the Women's Auxiliary. The Women's Auxiliary of the State Association is very active.

Dr. W. A. Evans, of Chicago, Ill., noted lecturer and writer on Public Health gave the "Oration in Public Health," Wednesday evening at the Coliseum. This lecture was open to the public and was well received.

Dr. Percy D. Peabody, of Webster, S. D., was installed as President and Dr. W. A. Pates, of Aberdeen, S. D., elected President-elect; Dr. J. R. Westaby, of Madison, S. D., Vice-president; Dr. J. F. D. Cook holding over as Secretary-treasurer.

The Secretary, Dr. J. F. D. Cook, presented to the House of Delegates a plan for a joint meeting with North Dakota State Medical Association, celebrating the Fiftieth Annual Session of the South Dakota State Medical Association, suggesting that the meeting be held in Aberdeen, S. D., as the most populous city on the border capable of housing the convention and as near to Milbank, S. D., where the organization had its First Annual Session, June 3, 1882. The House of Delegates concurred in and adopted the proposed plan and selected Aberdeen, S. D., as the place for the 1931 annual session.

The House of Delegates directed the following committee to visit the North Dakota State Medical Association at their meeting to be held May 26, 27, 28, 1930, and present the program for the proposed joint meeting: Drs. Percy D. Peabody, Webster; W. A. Bates, Aberdeen; M. C. Johnston, Aberdeen; E. A. Pittenger, Aberdeen; J. F. D. Cook, Langford. The committee made contact on May 27, with House of Delegates of the North Dakota State Medical Association, at Bismarck, N. D., was graciously received as fraternal delegates from their sister State, South Dakota. The proposed program was for a joint meeting, Fiftieth Annual Session.

The House of Delegates gave the matter due consideration and adopted the program, appointing a committee from their members to cooperate with the South Dakota committee on scientific program. Committee for North Dakota: Drs. L. W. Larsen, Bismarck; W. H. Long, Fargo; R. D. Campbell, Grand Forks.

The States of North and South Dakota, having been formed out of the Dakota Territory in 1889, of necessity divide our medical interests in public welfare as one and the same. We anticipate a real treat in having with us officially the North Dakota State Medical Association at the Fiftieth Annual Session at Aberdeen, S. D., June 2, 3, 4, 1931.

Dr. A. S. Sherrill and Miss A. Lindquist, both of Belle Fourche, S. D., were killed May 28, 1930, in an airplane crash near Pinicle, Montana. The doctor and nurse were enroute to visit a patient.

J. F. D. Cook, M.D., Secy.,
South Dakota State Medical Assn.,
Langford, S. D.

CLINICAL PATHOLOGICAL CONFERENCE

BY E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—521.

Baby boy, 9 months old, admitted April 2, and died April 3. Had been perfectly well up to April 1, 9 P. M., when he was seized with a sudden crying spell, doubled up, and appeared quite ill. At 11 P. M. passed a bloody stool. Had no normal bowel movement thereafter but had been passing blood by rectum. Vomited shortly afterwards and again about five hours before admission. None since. Before admission baby appeared quite ill and at frequent intervals was seized with severe crying spells and extreme restlessness.

Examination. Well developed, well nourished, quite ill baby boy. Slight redness of throat. Numerous coarse rhonchi through chest. Baby had had upper respiratory infection for several days prior to illness. Abdomen: no rigidity; mass definitely palpable in left lower quadrant. Rectal examination revealed mass at end of examining finger, which was apparently invaginated bowel; blood on withdrawal of the finger.

Laboratory. Urine negative. Hemoglobin 85 per cent; white blood cells 10,900. Blood group: father, mother, patient group four. X-ray April 2: marked distension of small bowel is shown with gas throughout its extent. Numerous fluid levels could also be made out in upright and inverted positions. No apparent distension of colon or rectum. Conclusions: intestinal obstruction with gas distension. Barium enema attempted. Barium seemed to enter rectum, fill ampulla, and from that point no further barium could be seen, the rest being expelled as fast as given. Gentle manipulation over the mass allowed some barium to permeate further up the bowel toward the splenic flexure. No further attempt at reduction.

To operating room 10:05 P. M.; returned 11 P. M. Under spinal anesthesia, left lower rectus incision made and mass palpated through the abdomen was found to be ileum which had intussuscepted into the colon and traversed the entire colon from cecum around to the anus. Reduced easily except near cecum where slight difficulty was encountered. At this point the bowel was hemorrhagic and gave evidence of impairment of nutrition. Abdomen closed in layers. Child taken back to bed, where subcu-

taneous saline was given, 450 c.c. preoperatively, 600 c.c. postoperatively.

April 3, 1:30 A. M., condition appeared poor. Pulse imperceptible; respirations rapid; temperature 107.8°.

Therapy: caffeine sodium benzoate, adrenalin, adrenalin injections into heart, hypodermoclysis. Became very cyanotic, respirations were labored, artificial respirations used; pulse and respirations ceased.

Post-mortem report. No peritonitis but a small amount of bloody fluid in the pelvis. No recurrence of intussusception. Bowel in region of ileocecal junction is thick and dark red. There is no actual gangrene but the appearance indicates a marked impairment of nutrition. The appendix shows the same change. Other organs normal.

Diagnosis. Intussusception; operation.

Comment. Intussusception usually occurs by invagination of the ileum into the cecum. This was an unusually long intussusception. There was some damage to the intestine, especially in the region of the cecum, because of interference with the blood supply.

Autopsy—30—395.

A man 71 years old was admitted to hospital on March 9 complaining of pain in the lower left quadrant of the abdomen of two days duration, with moderate abdominal distension. He did not reply very well to questions, but stated that his trouble began on March 8 with severe pain in the left lower quadrant, radiating across the abdominal wall. This was so severe that he was unable to straighten himself. He was admitted to the Swedish Hospital and prepared for operation but for some reason it was decided to wait. Since then the pain had decreased in severity so that on admission to this hospital he was fairly comfortable. He had not vomited and had not passed very much gas. There had been a similar attack two years previously, but less severe, and it was recovered from without treatment.

On examination his heart was found slightly enlarged to the left. There was a systolic murmur at

the apex. Auricular fibrillation was marked. The abdomen was moderately distended and was tympanitic except in the left lower quadrant where it was dull. There was moderate rigidity in the lower quadrant where it was dull. There was moderate rigidity in the lower left quadrant but no rebound tenderness. There was marked tenderness to percussion over the left kidney, but not on the right. X-rays taken on the tenth showed evidences of small bowel obstruction, probably due to transmesenteric hernia. Blood and urine were normal.

The patient was operated upon March 12 under spinal anesthesia and a large gangrenous bowel was found, possibly in the lower portion of the ileum, herniated through the mesentery of the lower portion of the descending colon. The bowel was black and remained so after applying hot compresses. About 14 inches were resected and this was followed by lateral anastomosis. The day after operation the temperature rose to 103°. The day thereafter it reached 105° and the patient died.

Post-mortem report. Emaciated elderly man. Recent surgical incision. Heart 460 grams; it shows a definite left ventricular hypertrophy; rather marked sclerosis of coronaries with myocardial fibrosis in the left ventricle. Hypostatic bronchopneumonia. Acute splenitis. Marked gaseous distension of the stomach and small intestine. The intestinal anastomosis is intact. The intestinal surfaces in the operative field are covered with a soft fibrinous exudate but there is no gangrene of the bowel. There is a deep pouch of peritoneum extending behind the descending colon up to the level of the lower pole of the left kidney; this is evidently the site of the hernia. The kidneys show cloudy swelling. There is marked hypertrophy of the prostate but no obstruction.

Diagnoses: (1) strangulated retroperitoneal hernia followed by ileus; (2) hypostatic bronchopneumonia; (3) hypertension heart with coronary sclerosis.

Autopsy—30—519.

A girl, 14 years old, admitted to hospital on March 9, complaining of chills and fever, general malaise, pain in the left ear, and reddening, induration, and tenderness of the left side of her face. These symptoms had been present for two days previous to admission. Last year the patient had had kidney trouble for several months and was unable to go to school. She was told that she had high blood pressure. She complained of slight dyspnea on exertion, and occasionally had some edema of the ankles and slight puffiness under the eyes. Tonsillectomy was performed at the age of four years.

On admission the patient was found to be well developed and well nourished, apparently in no pain. There was an indurated and inflamed area over the left side of the face, which was rather beefy in appearance and presented a definite border. There was also edema and induration around the left eye. Edema was present under both eyelids. There seemed to be some old inflammatory process on the left ear drum. The heart did not seem to be en-

larged on percussion. The pulse was rapid and regular. No murmurs were heard. X-ray examination on March 10 showed slight cloudiness of the right maxillary sinuses, suggesting pus or granulation tissue. The frontal sinuses were somewhat hazy.

Urine, examined on March 27, showed occasional hyaline and granular casts; albumin 4+; 30 to 40 red cells; 30 to 35 pus cells. On April 1 the pus cells were increased to 200 to 300, and many bacteria were present in the urine. The blood, examined on March 28, showed a leucocyte count of 18,600 with 88 per cent polymorphonuclears, 8 per cent lymphocytes, and 4 per cent monocytes. On March 19, hemoglobin was 43 per cent; red cells 2,100,000; white cells 29,000 with 93 per cent polymorphonuclears, 4 per cent lymphocytes, and 3 per cent monocytes. On March 10 blood urea nitrogen was 176 mg.; creatinin 5.8 mg. On March 26 urea nitrogen was 160 mg.; creatinin 4.3 mg.

The patient was sluggish mentally, vomited a great deal and had a downward course. She died April 3.

Post-mortem report. The left eye is greatly swollen and protruding. The left side of the face and neck are swollen and somewhat indurated. No ascites; no hydrothorax. The heart weighs 170 grams. No pneumonia. Cloudy swelling of the liver. The kidneys together weigh 185 grams; adherent capsules; the external surfaces are markedly pitted; the cortices are definitely reduced in thickness. Microscopic sections of the kidneys show typical chronic glomerulonephritis with acute exacerbation.

Diagnosis. Chronic glomerulonephritis with acute exacerbation resulting from a streptococcal infection of the neck.

Comment. The original cause of the glomerulonephritis is not evident from the history, but death resulted from exacerbation brought about by infection of the neck. Death was due to uremia. Patients with chronic glomerulonephritis are very susceptible to reinfections with streptococci and each infection does damage to the kidneys.

Autopsy—30—794.

The case is that of a woman, 58 years old, first admitted to hospital August 17, 1929; discharged August 18, against medical advice; stay one day. First admission, chief complaints: nervousness; easily fatigued; palpitation (two months); swelling in neck (ten years). She had typical toxic adenomatous goiter. Said she had no one to take care of her at home. Had been on Lugol's solution about two weeks. Was informed by the doctor who sent her to the hospital that she would be cured without operation. On being informed that this was the only means of cure, she refused to stay and insisted on going home. Seen by surgical staff who could not convince her to the contrary.

Readmission May 7, 1930; death May 24 (17 days). Complained of extreme nervousness (one year); edema of extremities (one month); lump in neck; extreme case of fatigue. On former admission basal

metabolic rate was 56. Did not feel badly after leaving the hospital until the first part of December, 1929, when she went to another hospital and was told that she needed an operation, which she again refused. Took medicine from private physician for a time for relief of swelling of legs which was becoming worse. Cardiac condition and nervousness became steadily worse until two weeks ago when she came to this hospital. Lost considerable weight since leaving hospital, that is, 47 lbs. since August, 1929. General health prior to present condition, good. Chief diseases: infantile paralysis (age five), lameness in left leg, scarlet fever, measles, pertussis when a child, pneumonia at 18 years of age. No family history of malignancy.

Other complaints: occasional frontal headache; occasional nose bleed; some interference with breathing; teeth poor; dyspnea and weakness; persistent, nonproductive cough; no precordial pain; definite tachycardia and palpitation; marked edema of extremities (one year); appetite very good but fails to gain weight; constipated, required physic; slight jaundice many years ago; considerable gas and flatulence. Venereal history negative.

Menses began at 13 years; flowed 5 days; 28 day type; menopause at 50. Right leg about three inches shorter, due to poliomyelitis at five. No children. Married twice. Father died 61, bronchitis; mother died 30, bronchitis (tuberculosis?).

Blood pressure 130/86. Thin, emaciated, elderly white woman, lying in bed; appeared ill; difficulty in breathing; pulsation of neck vessels. Frequent persistent cough. Eyes: no ptosis or exophthalmos. Upper plate; lower teeth in poor condition. Asymmetric enlargement of thyroid to right. Vessels of neck prominent and pulsating. Palpable thrill of neck vessels. Tumor, adenomatous mass, palpable just above sternum two to three cm. in diameter; another mass lying laterally just posterior to sternomastoid muscle. Skin not adherent. No thrill or bruit over gland. Chest: inspiratory retraction of third left interspace. Heart: slight enlargement to left; no palpable thrill; irregular beats; numerous extrasystoles; pulse deficit; systolic murmur at apex and aortic area (auricular fibrillation); few moist râles in bases of lungs. Abdomen distended with gas. Passed considerable gas by bowel. Irregular pigmentation of abdomen. Left leg shorter than right. Marked edema of both ankles.

Laboratory: sugar on three occasions (intravenous glucose?); many white blood cells; no albumin in urine. Blood: hemoglobin 90 per cent; white cells 16,100; lymphocytes 52 per cent; polymorphonuclears 47 per cent; monocytes 1 per cent. Group 4. X-ray of chest: bilateral pleural effusion, calcified nodule in right upper lobe, cardiac enlargement (type undetermined), possible pericardial effusion. Diagnosis indeterminate.

Progress notes: May 8, nervous and excitable to the point of being irrational; very disturbing; out of bed and mumbling and complaining; talking of leaving, etc.; given amytal. May 9, condition worse; apparently suffering from auricular fibrillation; blood pressure 138/84; pulse 176; very uncoöperative. May 11, put in oxygen tent with slight improvement

but soon became restless; restraints required; edema increasing in abdomen, about the same in legs; respiration less labored; heart rate about the same; fibrillation continuous; put on serious list; consultation with medical department. Diagnosis: toxic adenoma, probable crisis; auricular fibrillation. Advised doses of Lugol's per rectum, digitalen and digitalis intramuscularly; should receive equivalent of 4 c.c. of tincture digitalis daily for at least two days. Consultation with dermatological department. Depigmented areas are vitiligo; condition, no relation to thyroid disorder; fine rash over body might be iodine eruption.

May 21, apparently improved up to yesterday when she again seemed more restless and mentally cloudy. Today heart seemed more irregular and her mental condition was worse. Edema improved. May 22, progressing quite favorably until the 20th when she became mentally cloudy again. Developed Cheyne-Stokes respiration; pulse of variable magnitude; stimulants were used, including oxygen tent. Sodium bromide was given by rectum. Seemed slightly improved but was still irrational. Respirations more regular. Condition grew progressively worse and exitus occurred May 24, 6:35 P. M.

Medication: amytal, Lugol's solution, tincture of digitalis, allonal, morphin sulphate, digitalin, caffeine sodium benzoate, homocaffeine, sodium bromide, hyperventilation, steam inhalation, oxygen tent, intravenous 10 per cent glucose, ice bags to heart, boric ointment to lips, proctoclysis, (glucose and Lugol's), nasal gavage. Temperature 97° to 100.6°; terminal rise to 102.4°. Pulse varied from 90 to 170. Respirations 20 to 68.

Post-mortem report. Emaciated, elderly female; slight generalized edema of the subcutaneous tissues of the chest; scanty subcutaneous fat. About 1,000 c.c. of cloudy fluid in each pleural cavity; 200 c.c. of clear fluid in the pericardial cavity. Heart weighs 375 grams; slight left ventricular hypertrophy; myocardial scars in the left ventricle. Slight passive congestion of the liver. Kidneys, normal grossly. The right lobe of the thyroid weighs 40 grams, the left 42 grams; both lobes are filled with adenomas, many of which show calcification.

Diagnoses. (1) Toxic adenomatous goiter. (2) Hypertension heart with cardiac failure.

Comment. This case is interpreted as one which was originally hypertension. The toxic adenoma brought about cardiac decompensation and death. Death was largely due to hyperthyroidism and partly to cardiac failure.

Autopsy—30—793.

The case is that of a man, 54 years old, admitted to hospital May 18 and died May 24 (six days). He had had acute illness for two weeks. On day preceding admission had a little "moonshine." About noon the next day was seized with cramps in abdomen and vomited. Physician was called who suspected bowel obstruction but succeeded in getting bowel movement by enema. Patient continued to have pain and vomiting. For three days retained no food. Stool and vomitus were green. Morphin

sulphate had been given five times, last time day of admission. Patient had lost considerable weight in past month and was feeling quite miserable for two weeks preceding present illness. For twenty-five years had had attacks simulating gall-bladder trouble. Attacks precipitated by acids, not fats. Fat had always been well tolerated. Said to have been jaundiced ten years ago. Also stated that urine had not been flowing freely the last few days.

Examination. Pale, emaciated male, partially under the influence of morphine, acutely ill. Abdomen distended and tender. Tenderness more marked over McBurney's point. Bladder distended. Rectal examination showed hard prostate and mass in cul-de-sac. Crepitus over McBurney's point.

History suggests peritoneal inflammation (one week). No history of constipation, which precludes diverticulitis. Pulse fairly strong. Suggested as a finding against upper abdominal disease. Catheterization tried on admission; did not succeed because of obstruction in region of prostate. Patient passed about 200 c.c. afterward. Hard abdomen. Visible veins. Marked dehydration. Skin dry.

Urine: albumin +; very many white blood cells; a few red blood cells. Blood: hemoglobin 78 per cent; red cells 3,850,000; white cells 12,400; polymorphonuclears 66 per cent; lymphocytes 12 per cent; monocytes 4 per cent; myelocytes 4 per cent; metamyelocytes 14 per cent. Blood urea nitrogen 44.8 mg. X-ray of abdomen May 20: distension of bowel on left side of abdomen, but most of this probably represents colon, one distended loop in left upper quadrant which has the appearance of small intestine. In lateral view the accumulation of gas can be made out close to anterior body wall. This may represent either free gas or possibly some in bowel. The former seems more likely.

Operation May 19, 8:40 P. M. Sent to operating room 10:50, returned 11:20. Modified McBurney's incision made. Free pus and gas found. Perforation of loop of ileum uncovered. Drain put into right gutter, pelvis, abdominal cavity; and catheter into loop of ileum. Nurses' notes before operation: general weakness and pain in abdomen, emesis, morphin sulphate. Patient complained of pain in right side under ribs, nauseated, small emesis, very weak, did not void, complained of a pain inside abdomen, felt very nauseated, vomited, pyramidon. After operation: 10 per cent glucose intravenously, hypodermoclysis, emesis continued, voided, said he felt better than before operation, hypodermoclysis, intravenous saline, morphine sulphate, intravenous glucose, felt very weak, emesis, to operating room May 20 at 12:30 P. M.; pulse rapid, perspiring profusely. Hypodermoclysis May 21, foul serous drainage on dressing, none through tube, involuntary defecation, nausea and vomiting, hypodermoclysis. May 22, intravenous and subcutaneous fluids, liquid stool, diffuse foul drainage, felt very weak. May 23, continued with steam inhalation, intravenous fluids; felt very weak; said he felt fairly well; no drainage through tube; many liquid stools; caffeine sodium benzoate, growing weak, pulse imperceptible. Exitus May 24, 11:40 P. M. Temperature 98° to 101°. Pulse 80 to 130. Respirations 16 to 32. Fluid

intake 2875, 2500, 3250, 3900, 2400; output 675, 1000, 600, 1500(?).

Post-mortem report. Poorly nourished adult male. Recent surgical incision in the right lower quadrant. Scanty subcutaneous fat. The peritoneal cavity contains a large amount of fibrinopurulent exudate and dark brown fluid. The walls of the ileum are especially soft in the region of the perforation into which the drain was inserted. The intestinal coils are extensively glued together by soft adhesions. Extensive collections of pus in the lesser peritoneal cavity and under the diaphragm on the right side. Large perforated ulcer in the first portion of the duodenum on its anterior surface; the ulcer is about 1.5 cm. in diameter. There is a small amount of pus in the lower right pleural cavity. Acute bronchopneumonia. Acute splenitis. Cloudy swelling of the heart, liver, and kidneys.

Diagnosis. Generalized purulent peritonitis following a perforated duodenal ulcer.

Comment. The perforation in the ileum which was found at the exploratory operation is interpreted as secondary to the purulent peritonitis.

Autopsy—30—341.

The case is that of a man 75 years old who was admitted to hospital on October 12, 1929. He stated that two years previous to admission he had noticed two or three small blue spots on the sole of his right foot. One of these developed a small scab, and shortly thereafter an ulcer appeared and became progressively larger. This failed to heal, and a physician told the patient that he was suffering from diabetes. Six months before admission other bluish spots broke down and ulcerated. Four years before admission the patient had had a stroke, resulting in paralysis of the right side. This had improved somewhat. He had had some difficulty in starting urination and was troubled with dribbling. He had noticed very red urine at times. His vision was poor, occasionally suffered from diplopia, and was unable to walk in the dark.

His blood pressure was 175/90, pulse 80, respirations 18, and temperature 99.5°. The heart seemed enlarged to the left but there were no murmurs. The pupils reacted sluggishly to light and accommodation. The skin was atrophic in spots over both tibias anteriorly. The left foot was slightly swollen and some pitting edema was present. The right foot was markedly swollen to the ankle with marked pitting edema and a black crusted ulcer over the posterior aspect of the right heel, about 4 cm. in diameter. The radial arteries were hard. There was a slight increase of reflexes on the right side. There was a positive Romberg sign. There was a moderately enlarged, boggy prostate.

Urine showed albumin + and sugar 4+. There was slight secondary anemia with a leucocyte count of 10,000. Wassermann and Kahn tests were negative. P. S. P. was 40 per cent. Electrocardiogram showed left preponderance.

The patient was put on insulin and was soon sugar free. The gangrenous ulcer improved, but others

appeared. The patient became steadily weaker and died after 145 days in the hospital, March 5, 1930.

Post-mortem report. Poorly nourished, elderly male. Decubitus ulcer over the sacrum. Small indolent ulcer on the tip of the left great toe; numerous small ulcers on the anterior surfaces of both legs; large gangrenous ulcer 3 cm. in diameter on the right heel; similar ulcer on the left heel. Marked swelling of the left parotid gland. Old pleuritic adhesions laterally and inferiorly in the right chest cavity. The heart weighs 260 grams. Marked calcification of the left coronary artery and extreme stenosis at one point; moderate calcification of the right coronary but no narrowing. Terminal bronchopneumonia; old caseous tuberculosis in the lower lobe of the right lung. Cloudy swelling of the liver; a single small rounded mulberry calculus in the gall-bladder. Two small polypi in the pyloric end of the stomach; numerous diverticula of the descending colon, especially in the sigmoid. No gross changes in the pancreas. The kidneys together weigh 340 grams; fairly smooth surfaces. Severe atherosclerosis of the abdominal aorta with numerous ulcerated areas. Organs of the head and neck not examined.

Diagnoses. 1. Diabetes mellitus (on clinical grounds). 2. Multiple gangrenous ulcers of the legs and feet. 3. Severe coronary sclerosis. 4. Terminal bronchopneumonia. 5. Generalized arteriosclerosis.

Comment. This is an example of diabetes in an elderly man which was untreated until toward the end of his life. Death was apparently due to coronary sclerosis and gangrene. In elderly diabetics arteriosclerosis is the usual cause of death, since the introduction of insulin. Clinically it takes the form of coronary disease and gangrene in most instances.

Autopsy—30—340.

The case is that of a negro, 57 years old, who was admitted to hospital January 5, 1930. He stated that he had been well until June, 1929, when he developed general weakness and found that exertion tired him more easily than usual. He also began to lose weight and he noticed that the weight loss continued until the time of admission to the hospital. During the past three years there had been intermittent attacks of precordial pain, lancinating in character, cutting off the breath, and radiating to the left upper extremity and occasionally to the right. These pains occurred occasionally while at rest, but most frequently during exertion. Dyspnea and cough were both relieved by the patient assuming the upright position. For a month there had been smothering spells. He had had syphilis in 1924 with bubo. There had been repeated gonorrhoeal infections.

Blood pressure was 180/45, pulse 90 and irregular, respirations 42, and temperature 95.2°. The pupils were equal and regular and reacted to light and accommodation. There was a yellowish tinge to the conjunctivæ. The mouth was edentulous. The tonsils were enlarged and injected. The pharynx was reddened. The heart was enlarged to the left. The aorta seemed widened. There was systolic and diastolic murmur at the base over the second right interspace below the sternum. At the apex there was systolic and short diastolic murmur. The left pulse was weaker than the right. Blood pressure on the right arm was 150/40 and on the left arm was 100/70. The liver was palpated two fingers below the costal margin. There was edema of the feet and legs to the knees. The nails were of the watch crystal type. Duroziez sign was positive. There was a suggestion of water-hammer pulse.

Urine showed albumin + to 3+; red and white blood cells present almost constantly; no sugar. Wassermann and Kahn tests were positive. Icterus index was 23, and the patient was able to concentrate his urine at 1028. The leucocyte count was 11,000; hemoglobin and red cell count were normal. X-ray showed bilateral pleural effusion, left ventricular type of cardiac enlargement, and ectasia of the aorta.

The patient was given iodids and neosalvarsol and on February 27 the Wassermann and Kahn tests were negative. He died after two months in the hospital, March 5, 1930.

Post-mortem report. A fairly well nourished, elderly man. Slight edema of the feet. Old adhesions between the omentum and cecum and the anterior abdominal wall. 1500 c.c. of clear fluid in the left pleural cavity. The heart weighs 460 grams; pericardium firmly adherent around the base of the heart. The heart is 16 cm. in width. Moderate hypertrophy and dilation of the left ventricle. Slight thickening and retraction of the mitral leaflets. The aortic leaflets are markedly involved; they are greatly retracted and the free margins exhibit cord-like thickening. There is marked aortic insufficiency. The aortic ring is not dilated, measuring 7.5 cm. in circumference. Immediately above the aortic valve the ascending aorta is definitely dilated, measuring 10 cm. in circumference. A typical syphilitic aortitis is present in the arch of the aorta. Moderate edema and congestion of the lungs. Passive congestion of the liver and spleen. Numerous small calculi in the gall-bladder but none in the bile ducts. The kidneys show only passive congestion.

Diagnoses. Syphilitic aortitis with aortic insufficiency and hypertrophy and dilation of the heart. Definite cardiac failure.

Comment. Syphilitic aortitis is the most common anatomic finding in death due to syphilis. Syphilitic aortitis resulted in this case in aortic insufficiencies of the coronary arteries.

Often it causes occlusion of the aortic open-

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The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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THE ESCAPE OF THIRTEEN INSANE CONVICTS

The startling news came to us in the daily papers on June third that thirteen convicts had escaped from a state institution, a reformatory for the criminally insane, and made a successful dash for freedom. Five of the thirteen were known as killers, authorities said. They accomplished their purpose by capturing the warden of the reformatory and holding him as a sort of hostage. A great number of the inmates got out and some of them made their escape.

This occurred in Ionia, Michigan, and is a very serious reflection upon the minor authorities of an institution for the criminally insane. One hundred thirty convicts gained freedom but failed to make good their escape. These madmen were armed with arms, and razors, and used ruse to capture guards. These statements do not seem quite right. Here were "insane" convicts, known to be convicts and not classed among the insane at all which I do not doubt is a true statement. At one time they had a ward at Saint Peter for "insane" convicts and they had a similar experience, with the exception that their break for liberty was not successful. These "insane" men, in spite of the fact that private citizens joined with the posses and deputy

sheriffs, state troopers and other searchers, got away when they should have been locked up and kept locked up.

The editor has one suggestion to offer and that is that insane hospitals are not built to care for convicts. Many are put there as "insane," or classed as insane, when they are simply criminals. Insane people are very rarely capable of concerted action. Yet the men who got out of the cells bound some of the guards, taking their keys from them, and then after unlocking other cells and inviting other prisoners to join the break for liberty the thirteen started for the main gate of the reformatory, taking Owen, one of the night superintendents, with them—showing in every way that they were convict in type; and they were apparently ready to cut Owen's throat if it should be necessary in order to make good their escape. Taking place at it did early in the morning, the reformatory was not speedily given assistance in the capture of these convicts, and it is suggested that they were given outside aid as the forenoon passed with but two of the inmates captured; and it is quite likely that they were receiving outside help—of all the assinine bit of work this would mean! It makes us feel it is about time that state hospitals for the insane were not required to admit and care for the criminal type, or if they are to take the criminally "insane" into custody such hospitals should be built strongly enough and guarded closely and carefully enough to prevent such escape.

These men who got away, of course, would keep the residents of the community and the surrounding country in a state of terror and anxiety. It is stated that guns were kept loaded and the menfolk remained near their homes unless they were aiding in the search. All this information was given in one issue of the paper, and we do not know whether any of these men have been captured and brought back to the institution or not. But all the information as to how they made their escape and how they outwitted the guards is published. If some of the prisoners were recaptured we would like to know something about that!

We shall undoubtedly hear of these acts of violence and defiance of control from time to time unless someone in the United States takes a hand, sees that the laws we already have are enforced, and that such public buildings as the one in Ionia are properly built and guarded, if they are required to house the criminally insane, in order to prevent the escape of such men. It is bad enough to have legally recognized crimi-

nals carry on in this way, but when people are seeking some protection for a mental ailment greater care should be exercised. If this is not done, The JOURNAL-LANCET will keep up its tirade against the authorities who permit such conditions to prevail,—but perhaps the authorities are more interested in keeping the knowledge of their delinquency in this respect suppressed. If all journals and newspapers would aid in the suppression of such convicts or “insane” we might have some order in the country. This calls to mind, too, the fact that recently another house in Minneapolis has been entered by vandals, and destruction similar to that visited upon another Minneapolis home a few weeks earlier has again been carried out. It would seem that someone would notice these unusual proceedings in time to check them before so much damage was done—but apparently these criminally-minded youths are permitted to go on undisturbed.

CAROL “ASS-ENDS” THE THRONE

The papers of June ninth announce with flaring headlines the “ascent” of Carol to the throne of Rumania after an absence of several years following his abdication and subsequent foreign residence. Yet when he returned to Bucharest he was greeted by public acclamation, as well as met joyfully by his old servants and also by his brother, Prince Nicholas. They seem to have great times over in “the old country,” and a man is quite liable to do as he pleases.

King Carol first contracted a morganatic marriage with the daughter of an army officer, which was later annulled, and while there was some trouble, apparently, concerning the legal name of the child resulting from this union it did not prevent his marriage to Princess Helen, of Greece, whom he promptly deserted after the birth of their son for Madame Lupescu; and with Madame Lupescu he lived in exile for a long time, occasionally making attempts to get back when his opponents were trying to keep him out. But he persisted, and eventually his enemies yielded, and he has now been proclaimed King.

Even after such a record as this man has they seem to think nothing about it; they treat it as one of Nature’s “necessities,” apparently. Queen Marie happened to be away at the time of Prince Carol’s spectacular return to his native land, but she wired her greetings and congratulations, and will probably return to assist in the government of Rumania.

Later news appearing in the press would indicate that the newly acclaimed King Carol intends to carry out his ruling power with a high hand. He has already ordered the prosecution of two or three former ministers, although he has been in power but a day or two. In view of his political ambitions, he undoubtedly has kept in touch with the situation prevailing in Rumania, but it would seem to us that a little more deliberateness and thought would be required in acting on matters of national importance.

So vice and irregularities of an emotional character are not limited to the United States. Such conditions are probably prevalent in all the countries of Europe, and if we knew all that actually occurs we would find many instances of this kind. But we can’t pat ourselves on the back very much for there is much of this same instability in our own state and country, but here it is frowned upon, at least. All The JOURNAL LANCET is seeking to do is to clean up the reports of various criminal episodes—news that is apparently very gratifying to the senses of the American public.

HOW DO YOUR YEARS AFFECT YOU?

A very good clipping from a paper was sent to the editor the other day referring to age in determining the number of years lived. Of course it makes a difference how old one is from a point of fact, but the number of years actually do not matter. When you think of the number of people who live to be eighty, ninety, or a hundred, or more, you know that the years do not carry much weight in some instances.

We were very much amused over the Scotch story heard the other day. A young man said to an old man, “Why don’t you stop drinking?” The old man promptly replied, “What difference does it make; I’m now eighty years old and began drinking when I was sixteen years old. My brother began drinking when he was fifteen years old and he lived to be ninety-three; and three years after he died he was transferred from one cemetery to another, and you would be surprised at his appearance even then, for he hadn’t changed at all, and looked a good deal better than you do now!” All of which was probably true, because a man who had been drinking “Scotch” whiskey for seventy-eight years was evidently “well-preserved.” The anti-prohibitionist will probably argue that whiskey is a good thing once in a while—keeps you living on and on. But the man who is a “dry,” will

probably argue that if the older Scotchman had behaved himself and not been a drinking man he would have lived to be a hundred and fifty years old!

Many older people are really as young as the lads in the air force. That is because they are built that way, full of youth, full of interest in all sorts of things, and they keep up with the average population in their daily pursuits. The article mentioned goes on to say that youth is not a time of life, it is a state of mind. You might just as well say age is a state of mind. And as long as you take care of yourself, and work and feel right you are apt to live on indefinitely. The author of the article states that recently he met a young man of twenty-eight who was full of fears. His brain had become "static," that is, he did not know how to think. "He seemed vaccinated against new ideas. I am twice his age, but I contend that I am younger than he is."

Then a good many people worry about gray hair, but they seem to get along just as well as anyone else, live as long and look as well as the younger man or woman, so that is simply a physical characteristic. Then there are a number who get along with no hair, or are practically bald headed. The editor knows of one man who gets along without any hair very nicely because it does not need to be brushed all the time; this constant brushing of hair is detrimental to the growth! So if you are bald or beginning to grow bald, don't worry about it; your hair will come back or stay out as it chooses.

The main thing to remember, this man tells us, is that we are not to have wrinkles on our brain. That is a good suggestion. That eliminates all nonsense and fear and worries and gives a man a chance to do his work well and faithfully. The writer suggests, too, that wrinkles should not be on the heart nor on the soul—but a great many people may take exception to the latter. That is pretty strong stuff. Herbert Casson, in *Forbes Magazine*, says, too: "As long as a man keeps going" (which is a very important thing) "and jumps out of bed every morning with a smile, he is young." Sure he is, but how many of us can do it when we are trying to work and earn our daily bread?

NEWS ITEMS

Dr. B. A. Adams, Bristol, S. D., has sold his practice and moved to San Landreo, California.

Dr. Peter Ward, Chicago, has been named as superintendent of the Miller Hospital, St. Paul.

Dr. E. R. Fouts, Townsend, Mont., has moved to Broadview, where he will continue general practice.

Dr. Charles T. Granger, Rochester, Minn., was recently married to Mrs. Bertha Irish, Forest City, Iowa.

Dr. J. E. Schneider, who has been located at Bowman, N. D., for many years, died in that city recently.

Dr. H. Longstreet Taylor, St. Paul, was again re-elected president of the Ramsey County Public Health Association.

A class of 41 nurses was graduated from the Northwestern Hospital, Minneapolis, school of nursing this month.

Dr. A. J. Henderson, Kiester, Minn., is taking a four months postgraduating course at the Bellevue Hospital, New York.

Dr. Geo. B. Weiser, New Ulm, Minn., has been honored by being elected president of the State Board of Medical Examiners.

Dr. L. A. Fritche, New Ulm, Minn., the well known physician of that city, has filed as a candidate for Congress from that district.

Dr. A. C. Hilding, Rochester, Minn., is the winner of the 1929 research prize offered by the Minnesota Society of Internal Medicine.

Dr. E. O. Church, Big Stone City, S. D., was seriously injured when his car took fire and he attempted to extinguish it. It was a total loss.

Dr. Wm. Davis and daughter, St. Paul, are motoring to their summer home at South Orleans, Mass. They will return early in September.

Dr. L. L. Gibbon, Lowry, Minn., died last month at the age of 56 years. The burial was at Minneapolis, where he had resided for many years.

Dr. J. L. Waldner, Parkston, S. D., who has been traveling in Europe during the past year, has recently returned and will again resume general practice.

Dr. K. D. Holmgren, Upsala, Minn., was seriously injured by an explosion at his office. The doctor was at work in his laboratory when the accident occurred.

One hundred nurses from Minnesota will attend the biennial convention of the National Organization for Public Health Nursing at Milwaukee this month.

Dr. Hugh Cabot, former dean of the school of medicine at the University of Michigan, has joined the staff of the Mayo Clinic as senior consultant in surgery.

The fourth annual convention of the South Dakota Hospital Association will be held at Aberdeen on June 16-17. Dr. D. L. Braskamp is president of the association.

Dr. Harold Brunn, noted San Francisco surgeon, will be one of the leading speakers at the annual meeting of the Montana State Medical Society, at Butte, next month.

A new hospital has been incorporated at Vermillion, S. D., with a board of 15 directors. One gift of \$30.00 has already been made as a memorial to the late Dr. Myron D. Thompson.

Dr. B. Randall, Graceville, Minn., one of the pioneer physicians of that section, having opened offices in that city in the year of 1884, died of a sudden heart attack. He was 72 years old.

Dr. Charles H. Mayo, noted Rochester surgeon, was awarded an honorary Doctor of Law degree from Hamline, Minn., University at the seventy-second annual commencement exercises held this month.

Dr. H. B. Beeson, of Grand Forks, will head the North Dakota Academy of Ophthalmology and Otolaryngology, which held its sessions at Bismarck in conjunction with the North Dakota Medical Association.

More than 5,000 members of the medical profession are expected in Minneapolis for the international assembly of the Interstate Postgraduate Medical Association of North America, to be held at the Municipal Auditorium, October 20 to October 24.

Physicians of North and South Dakota will hold a joint celebration of the founding of the two state associations in Aberdeen in June, 1931. This event will be known as the "Golden Anniversary" and elaborate plans will be made for a large attendance.

Dr. and Mrs. Walter R. Ramsey, St. Paul, will spend three months in visiting the European cities this summer. Dr. Ramsey will study the health conditions of Russia, and will

attend a meeting in Belgium as a United States representative of the International Association of Childs Welfare.

Dr. B. S. Adams, Hibbing, Minn., will be among the honored speakers at the eighty-first annual session of the American Medical Association to be held June 23-27 in Detroit. Those who have made the most notable contributions to medical progress during the past year are selected to address the congress.

Dr. W. A. Coventry, Duluth, is the chairman of the general committee who will have charge of all the arrangements for the Minnesota State meeting that will be held in that city July 14-16. Over 2,500 invitations have been mailed out to physicians and their wives, and one of the largest meetings ever held by the society is promised.

The eighth annual meeting of the Great Northern Railway Surgeon's Association will be held at Grand Forks, June 19-20. A very interesting program has been arranged for the two days session. Dr. R. D. Campbell, Grand Forks, is president, Dr. R. C. Webb, Minneapolis, secretary and Dr. G. M. Williamson, Grand Forks, chairman of Entertainment Committee.

A meeting of the Sioux Falls District Medical Society was held at the Green Lantern Banquet Room, Sioux Falls, S. D., Tuesday, June 10. The meeting was preceded by the usual dinner. The speaker for the occasion was Dr. Anatole Kolodny, of Sioux City, who presented a paper on "Surgical Treatment of Irretractable Pain." He discussed trigeminal neuralgia, sciatica, and the common neurological afflictions difficult of treatment. The talk was given to suit the needs of the general practitioner and was not a highly scientific neurological lecture. The speaker was formerly Professor of Neurological Surgery of Iowa and has had extensive training in European Clinics. Mention again is made of the need of care in the dispensing of opiates to addicts. We do not wish any of our members experiencing difficulty because of technical violation of the narcotic laws.

The Rush Alumni of South Dakota have the bad habit of meeting for lunch on the second day of the South Dakota State Medical Association. This time at Sioux Falls, May 22, 1930. A large crowd of forty-three Rush Fellows gathered at the "Sign of the Green Lantern." We had a great time renewing old acquaintances. Dean Irons gave us a most interesting ac-

count of what's doing at "Dear Old Rush." One of our Rush '02 fellows, Dr. Lorenzo N. Grosvenor, was President of the state meeting this year, and another, Dr. J. R. Westaby '13, of Madison, was elected vice-president. On the state program we had Dean Irons '03, Dr. D. M. Blum '21, of Des Moines and Dr. J. R. Gerstly '09, of Chicago. Dining with us also was Deau G. R. Albertson of our South Dakota University Medical School, and Dr. W. A. Bates of Aberdeen, the president-elect.

The annual meeting of the North Dakota Academy of Ophthalmology and Otolaryngology was held in Bismarck, May 27. At the scientific session the following program was presented: Annual Address by the President, Dr. Geo. M. Constans, Bismarck; Biography of Dr. Elkanah Williams, Dr. W. L. Diven, Bismarck; Atypical Mastoids (slide illustration), Dr. W. R. Winn, Fargo; Bronchoscopy and Esophagoscopy, (observations in a series of one hundred cases), Dr. A. D. McCannel, Minot; Tumors and Pseudotumors of the Orbit, with lantern slides, Dr. W. L. Benedict, Rochester, Minn. Dr. McCannel exhibited a case of Sympathetic Ophthalmia. Dr. Constans presented one of Lupus with eye involvement. At the business session Dr. H. G. Grieve, of Minot, was elected to active membership and Dr. Benedict to honorary membership in the Academy. The fall meeting will be held in October at Grand Forks. Officers elected for the coming year are at follows: President, Dr. H. B. Beeson, Grand Forks; vice-president, Dr. J. P. Miller, Grand Forks; secretary-treasurer, Dr. F. L. Wicks, Valley City; councilors, Dr. Rolf Tainter, Fargo, and Drs. M. B. Ruud and G. J. Gislason, Grand Forks.

CLASSIFIED ADVERTISEMENTS

Interne Wanted

Internship available in the Abbott Hospital and Janney Children's Hospital, Minneapolis, beginning July 1st. Excellent opportunity for anyone who wishes to specialize in Pediatrics. All staff members are connected with University of Minnesota. (See staff list in adv. on another page.) If you have completed your internship and wish special pediatrics training you should look into this service. Only graduates of class A schools need apply. Physicians in practice who wish to avail themselves of this opportunity will be considered. Apply Abbott Hospital, 17th Street and First Ave. So., Minneapolis.

Location Wanted

By general practitioner with hospital experience. Competent, no bad habits. Address 715, care of this office.

Position Wanted

Graduate nurse would like position in Minneapolis doctor's office. Alice Collins, Kenwood 2045 or 1417 La Salle Ave., Minneapolis.

Locum Tenens Work Wanted

Experienced physician, licensed in Minnesota, desires locum tenens or assistantship. Available now. Address 732, care of this office.

Office for Rent

Excellent location for physician and dentist in modern fireproof building. Rent very reasonable. W. D. Kregel, 2180 Marshall Ave., St. Paul, Minn.

Office Position Wanted

Experienced young woman would like relief work or permanent position in Minneapolis doctor's office. Mrs. W. Lux, 3724 Portland Ave., Minneapolis, Colfax 5444.

Doctor, Attention!

Doctor, let us sell your practice, find suitable associate, assistant, location, or position for you. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

Physician Wanted

Splendid opening for physician at Carpio, Ward County, North Dakota. Excellent agriculture community, large territory. Write to First National Bank, Carpio, N. D.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Technician at Liberty

Woman, 31 years old, would like position in small hospital, clinic or doctor's office, as laboratory and X-ray technician. Can furnish good references. Address 722, care of this office.

For Sale

One Victor Snook X-Ray Machine, latest type, with Victor X-Ray Table and complete equipment. Exactly like new. Will sacrifice for cash. Terms to responsible party. Address 734, care of this office.

Location Wanted

Young physician, age 32, with special training in Surgery and Urology interested in location with group, or doctor requiring an assistant, or location of own, or industrial surgeon. Address 731, care of this office.

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 P. P. EWALD, M.D., Delegate.....Lead

ROSEBUD—TENTH DISTRICT

R. J. QUINN, M.D., Delegate.....Burke
 R. V. OVERTON, M.D., Alternate.....Winner

KINGSBURY COUNTY—ELEVENTH DISTRICT

G. V. JAMIESON, M.D., Delegate.....DeSmet
 D. L. SCANLON, M.D., Alternate.....Volga

WHETSTONE VALLEY—TWELFTH DISTRICT

H. G. HARRIS, M.D., Delegate.....Wilmot
 A. E. DE TUNCO, M.D., Alternate.....Milbank

STANDING COMMITTEES

CHAPTER VII, SECTION 2

SCIENTIFIC WORK

J. B. GREGG, M.D., 1933.....Sioux Falls
 W. H. GRIFFITH, M.D., 1931.....Huron
 J. F. D. COOK, M.D., Secy.....Langford

PUBLICATION POLICY AND LEGISLATION

SECTION 3

PRESIDENT

P. D. PEABODY, M.D.Webster

PRESIDENT-ELECT

W. A. BATES, M.D.Aberdeen
 The Council

PUBLICATIONS

SECTION 4 AND 6

The Council

MEDICAL DEFENSE

T. F. RIGGS, M.D., 1933..... Pierre
 S. M. HOHF, M.D., 1931.....Yankton
 M. C. JOHNSTON, M. D., 1932.....Aberdeen

MEDICAL EDUCATION AND HOSPITALS

SECTION 6

N. T. OWEN, M.D., 1931.....Rapid City
 J. C. OHLMACHER, M.D., 1932.....Vermillion
 H. T. KENNEY, M.D., 1933.....Watertown

MEDICAL ECONOMICS

SECTION 7

D. L. SCANLON, M.D., 1931.....Volga
 D. A. GREGORY, M.D., 1932.....Milbank
 H. W. SHERWOOD, M.D., 1933.....Doland

HYGIENE

W. H. SANTON, M.D., 1931.....Huron
 GOLDIE ZIMMERMAN, M.D., 1932..Sioux Falls
 E. A. PITTINGER, M.D., 1933.....Aberdeen

CANCER

J. C. SHIRLEY, M.D., 1931.....Huron
 R. G. STEVENS, M.D., 1932.....Sioux Falls
 W. R. BALL, M.D., 1933.....Mitchell

NECROLOGY

L. J. PANKOW, M.D., 1931.....Sioux Falls
 C. O. OLSON, M.D., 1932.....Groton
 J. B. VAUGHN, M.D., 1933.....Castlewood

ANNUAL ARRANGEMENTS

M. C. JOHNSTON, M.D.Aberdeen
 W. A. BATES, M.D.Aberdeen
 R. D. WILSON, M.D.Aberdeen
 R. G. MAYER, M.D.Aberdeen
 F. KRAUSHAAR, M.D.Aberdeen
 E. A. PITTINGER, M.D.Aberdeen
 F. H. COOLEY, M.D.Redfield
 J. L. CALENE, M.D.Aberdeen
 J. E. DUNN, M.D.Groton
 B. C. MURDY, M.D.Aberdeen
 G. H. TWINING, M.D.Mobridge

SPECIAL COMMITTEES

ADVISORY COMMITTEE CO-OPERATING WITH STATE

BOARD OF HEALTH

B. M. HART, M.D., Chairman.....Onida
 N. K. HOPKINS, M.D.Arlington
 E. W. JONES, M.D.Mitchell
 L. J. PANKOW, M.D.Sioux Falls
 F. F. PFISTER, M.D.Webster

ADVISORY COMMITTEE CO-OPERATING WITH SOUTH

DAKOTA PUBLIC HEALTH ASSOCIATION

A. E. BOSTROM, M.D.DeSmet
 B. M. HART, M.D.Onida
 B. A. BOBB, M.D.Mitchell
 O. R. WRIGHT, M.D.Huron

EDITORIAL COMMITTEE OF JOURNAL-LANCET

- S. M. HOHF, M.D.Yankton
- C. WM. FORSBERG, M.D.Sioux Falls
- J. F. D. COOK, M.D.Langford

JOINT COMMITTEE OF NORTH AND SOUTH DAKOTA
STATE MEDICAL ASSOCIATION OF ANNUAL
ARRANGEMENTS AND PROGRAM

FOR NORTH DAKOTA

- L. W. LARSEN, M.D.Bismarck
- W. H. LONG, M.D. Fargo
- R. D. CAMPBELL, M.D.Grand Forks

FOR SOUTH DAKOTA

- PERCY, D. PEABODY, M.D.Webster
- W. A. BATES, M.D.Aberdeen
- M. C. JOHNSTON, M.D.Aberdeen
- E. A. PITTENGER, M.D.Aberdeen
- J. F. D. COOK, M.D.Langford

PROCEEDINGS OF THE HOUSE OF
DELEGATES

TUESDAY AFTERNOON, MAY 20, 1930

The first meeting of the House of Delegates of the Forty-ninth Annual Session of the South Dakota State Medical Association was called to order at the Elks Club, Sioux Falls, at 2:25 p. m., Tuesday, May 20, 1930, by the President, Dr. P. D. Peabody, Webster, S. D.

There being no objection, Mr. D. D. Jenne, Field Supervisor of the United States Fidelity & Guaranty Company read a paper which reviewed the situation in connection with the group medical defense policy. This was discussed by Dr. G. G. Cottam, Sioux Falls, Dr. S. M. Hohf, Yankton, Dr. W. A. Bates, Aberdeen, Dr. A. S. Rider, Flandreau, Dr. N. T. Owen, Rapid City, Dr. M. C. Johnston, Aberdeen, Dr. P. D. Peabody, Webster, Dr. M. J. Hammond, Watertown, Dr. L. J. Pankow, Sioux Falls, and Dr. E. B. Taylor, Huron. This matter was referred to the Committee on Reports of Officers and Committees. Upon motion made by Dr. P. D. Peabody, regularly seconded, it was voted that Dr. Cottam present the group medical defense policy to the members at the general meeting.

Secretary Cook then called the roll and the following Councilors and Delegates were present:

COUNCILORS

SECOND DISTRICT

- H. W. SHERWOOD, M.D.Doland

FOURTH DISTRICT

- A. A. McLAURIN, M.D.Pierre

FIFTH DISTRICT

- E. B. TAYLOR, M.D.Huron

ELEVENTH DISTRICT

- A. E. BOSTROM, M.D.DeSmet

DELEGATES

FIRST DISTRICT

- M. C. JOHNSTON, M.D.Aberdeen
- J. E. DUNN, M.D.Groton
- R. G. MAYER, M.D.Aberdeen
- W. A. BATES, M.D.Aberdeen

SECOND DISTRICT

- W. G. MAGEE, M.D.Watertown
- M. J. HAMMOND, M.D.Watertown

THIRD DISTRICT

- H. A. MILLER, M.D.Brookings

FOURTH DISTRICT

- B. M. HART, M.D.Onida

SEVENTH DISTRICT

- A. S. RIDER, M.D.Flandreau
- G. E. VAN DEMARK, M.D.Sioux Falls
- N. J. NESSA, M.D.Sioux Falls

EIGHTH DISTRICT

- S. M. HOHF, M.D.Yankton
- H. KLIMA, M.D.Tyndall

NINTH DISTRICT

- N. T. OWEN, M.D.Rapid City

The Secretary, J. F. D. Cook, of Langford, stated that the minutes of the 1929 meeting had been published in full in the July 15, 1929, issue of The JOURNAL-LANCET.

Upon motion made by Dr. Hohf and regularly seconded, the minutes as published were adopted without reading.

The following committees were appointed by President Grosvenor:

REFERENCE COMMITTEE ON CREDENTIALS

- J. E. DUNN, M.D.
- J. R. WESTABY, M.D.
- R. A. KELLY, M.D.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS
AND COMMITTEES

- H. W. SHERWOOD, M.D.
- A. A. McLAURIN, M.D.

REFERENCE COMMITTEE ON RESOLUTIONS AND
MEMORIALS

- M. C. JOHNSTON, M.D.
- A. S. RIDER, M.D.
- R. S. JACKSON, M.D.

REFERENCE COMMITTEE ON FINANCE

- J. A. HOHF, M.D.
- A. A. HEINEMANN, M.D.
- C. FLETT, M.D.

REFERENCE COMMITTEE ON AMENDMENTS TO
CONSTITUTION

A. E. BOSTROM, M.D.
H. R. KENASTON, M.D.
W. R. BALL, M.D.

REFERENCE COMMITTEE ON SCIENTIFIC WORK

J. B. GREGG, M.D.
E. B. TAYLOR, M.D.
J. F. D. COOK, M.D.

COMMITTEE ON NOMINATIONS AND PLACE OF ANNUAL
SESSION

FIRST DISTRICT

M. C. JOHNSTON, M.D.

SECOND DISTRICT

W. G. MAGEE, M.D.

THIRD DISTRICT

H. A. MILLER, M.D.

FOURTH DISTRICT

B. M. HART, M.D.

FIFTH DISTRICT

J. C. HAGIN, M.D.

SIXTH DISTRICT

W. R. BALL, M.D.

SEVENTH DISTRICT

A. S. RIDER, M.D.

EIGHTH DISTRICT

S. M. HOHF, M.D.

NINTH DISTRICT

J. L. STEWART, M.D.

TENTH DISTRICT

R. J. QUINN, M.D.

ELEVENTH DISTRICT

G. V. JAMIESON, M.D.

TWELFTH DISTRICT

H. G. HARRIS, M.D.

Secretary Cook stated that inasmuch as he had not received reports from Mitchell, Sioux Falls and Black Hills Districts, his report would have to be postponed until a later session.

Secretary Cook read the report of the Councilor of the First District to which was attached a copy of the Revised Fee Bill. This matter was referred to the Committee on Reports of Officers and Committees.

Reports of Councilors from the various districts were made as follows:

SECOND DISTRICT

H. W. SHERWOOD, M.D.

THIRD DISTRICT

H. A. MILLER, M.D.

FOURTH DISTRICT

A. A. McLAURIN, M.D.

FIFTH DISTRICT

E. B. TAYLOR, M.D.

SEVENTH DISTRICT

L. J. PANKOW, M.D.

EIGHTH DISTRICT

S. M. HOHF, M.D.

NINTH DISTRICT

J. L. STEWART, M.D.

Secretary Cook read the report of the Councilor of the Eleventh District.

The printed program was submitted as the report of the Standing Committee on Scientific Work.

On the report of the Standing Committee on Public Policy and Legislation, the matter of the osteopathic legislation and the Basic Science Bill was deferred until the meeting of the Council on Tuesday evening, upon motion made by Dr. Sherwood and seconded by Dr. Bostrom.

Secretary Cook read the report of the Special Committee on Medical Education. Upon motion made by Dr. Hohf, and regularly seconded, this report was deferred until the meeting of the Board of Councilors.

President Grosvenor stated that the Committee on Medical Economics and the Committee on Reports of Officers and Committees would consider the Fee Bill presented by Aberdeen District.

The report of the Committee on Arrangements was presented by Dr. Pankow.

Dr. Bostrom presented the report of the Special Committee on Extra Medical Health Activities. This report was referred to the Committee on Reports of Officers and Committees.

The matter of a Delegate to the A. M. A. was discussed. This was referred to the Committee on Nominations with the suggestion that they nominate someone who will be in attendance at the Detroit meeting.

A joint session in 1931 of the North Dakota and South Dakota State Medical Associations was discussed. Dr. Johnston extended an invitation on behalf of Aberdeen. Upon motion made by Dr. Peabody and seconded by Dr. Bostrom, it was voted that the President appoint a special committee to consider the matter of a joint meeting.

Secretary Cook read invitations from the Watertown Chamber of Commerce, Chamber

of Commerce of Rapid City, Aberdeen Medical Society, Alonzo Ward Hotel, Aberdeen Sherman Hotel, Aberdeen Chamber of Commerce.

Secretary Cook then read a communication from the Commonwealth Fund of New York regarding a new project in the field of public health, and suggested that the matter be placed in the hands of Dr. Bostrom's committee for consideration.

Secretary Cook then read a communication referring to the giving of contraceptive advice to patients. Upon motion made by Dr. Johnston and regularly seconded, this communication was laid on the table.

President Grosvenor read a communication from Past President Clough.

There being no further business, the meeting adjourned at four forty-five o'clock.

HOUSE OF DELEGATES

THURSDAY MORNING, MAY 22, 1930.

The meeting was called to order at seven-forty o'clock by President Grosvenor.

The following were present:

COUNCILORS

H. W. SHERWOOD, M.D.
 FRED TREON, M.D.
 L. J. PANKOW, M.D.
 (Acting for R. W. Mullen)
 A. E. BOSTROM, M.D.

DELEGATES

M. C. JOHNSTON, M.D.
 J. E. DUNN, M. D.
 R. G. MAYER, M. D.
 W. A. BATES, M.D.
 W. G. MAGEE, M.D.
 M. J. HAMMOND, M.D.
 WM. R. BALL, M.D.
 R. A. CRAWFORD, M.D.
 A. S. RIDER, M.D.
 S. M. HOHF, M.D.
 G. R. ALBERTSON, M.D.
 A. A. HEINEMANN, M.D.
 N. T. OWEN, M.D.
 C. A. BUTLER, M.D.

Secretary Cook read the minutes of the last meeting. Upon motion regularly made, seconded and carried, the minutes were accepted.

Dr. Sherwood gave the report of the Reference Committee on Reports of Officers and Com-

mittees on the report of the Committee appointed to investigate extra medical health activities. Upon motion made by Dr. Bostrom, seconded by Dr. Sherwood, and carried, the following recommendation contained in the report was adopted:

"Your Committee appointed to report on extra medical health activities in the state of South Dakota, after due deliberation, respectfully recommends that the South Dakota State Medical Association appoint an advisory committee to meet with the South Dakota Public Health Association at such time and place as may be determined upon, to direct and assist in the planning of the work of this organization, and that the State Medical Association give its hearty support to this movement which is primarily the prevention of tuberculosis."

Secretary Cook presented his report as Secretary-Treasurer. Upon motion made by Dr. Rider, seconded by Dr. Pankow, the report was adopted.

President Grosvenor appointed the following as a committee to confer with the North Dakota State Medical Association on the matter of having a joint meeting in 1931:

Dr. M. C. Johnston, Aberdeen, Chairman
 Dr. J. B. Gregg, Sioux Falls
 Dr. J. F. D. Cook, Langford

Upon motion made by Dr. Johnston and seconded by several, the honorary memberships outlined in the report of Secretary Cook were adopted as recommended.

(See List, Secretary's Report)

Dr. Johnston, Chairman of the Reference Committee on Resolutions, presented the following resolutions:

"WHEREAS, The South Dakota State Medical Association appointed a special committee to investigate the educational needs of the Medical Department of the State University in order to enable the University to meet the requirements of various Class A medical schools of the United States, and

"WHEREAS, This Committee has investigated such needs and made a written report to the House of Delegates; therefore be it

"RESOLVED, That the House of Delegates accept and heartily concur in and endorse the report of said Committee and recommend that this resolution and the accompanying Committee report be incorporated in the transactions of the Association, and copies sent to the President of the Regents of Education of the State of South Dakota, to the President of the South Dakota University, to the Dean of the School of Medicine of the University of South Dakota, and that a copy be published in the official Journal of the Association."

Upon motion made by Dr. Johnston and regularly seconded, the above resolution was adopted.

"WHEREAS, The citizens of Sioux Falls and the Seventh District Medical Society have shown great consideration for the members of the South Dakota State Medical Association, and by their wonderful spirit of hospitality have contributed decidedly toward making the Forty-ninth Annual Session of the Association a great success; therefore be it

"RESOLVED, That this Association hereby express our heartfelt thanks for the wonderful coöperation here enjoyed, and we especially wish to thank the essayists and others who have so generously contributed of their time; the Sioux Falls Chamber of Commerce for the tender of the freedom of the city; the Elks Lodge for the use of their splendid hall for our meetings; the whole Seventh District Society, and particularly Dr. Pankow and the Committee of Arrangements who have labored so successfully to make the meeting a success; be it

"FURTHER RESOLVED, That we extend our thanks to the citizens and ladies of the Auxiliary for the fine entertainment provided the visiting doctors and their wives."

Upon motion made by Dr. Johnston and regularly seconded, the resolution was adopted.

"WHEREAS, The Fiftieth Anniversary of the organization of the Medical Association of the Territory of Dakota occurs in 1931, and since such organization the Territory has been divided into the states of North and South Dakota, and believing that such anniversary should be celebrated by a combined meeting of the two sister state associations; therefore be it

"RESOLVED, That the South Dakota State Medical Association extend to the North Dakota State Medical Association our hearty invitation to meet with our Association at the designated city during the year 1931, the details of time of meeting and program to be determined by joint meetings of the officers of the two states."

This resolution was adopted upon motion made by Dr. Johnston and regularly seconded.

"WHEREAS, The present plan of allowing Delegates to the meeting of the American Medical Association to pay their own expenses to said meeting works to the disadvantage of the State Association, in that the Delegates are sometimes unable to attend such meeting; therefore be it

"RESOLVED, That the necessary expenses of our Delegate to the American Medical Association meeting in 1930 and thereafter be paid from the funds of the State Medical Association."

Upon motion made by Dr. Johnston and regularly seconded, this resolution was adopted.

"RESOLVED, That the South Dakota State Medical Association is in hearty accord with the plan of the Commonwealth Fund to promote rural health, and

it is the unanimous desire of the Association assembled at Sioux Falls, S. D., at its annual session that South Dakota be selected as one of the states to receive the coöperation and benefits of the Commonwealth Fund, and respectfully pledge our coöperation."

Upon motion made by Dr. Bostrom, seconded by Dr. Johnston, this resolution was adopted.

The report of the Special Committee on Medical Education was discussed by Dr. Bates and Dr. Owen. Upon motion made by Dr. Owen, seconded by Dr. Johnston, the Secretary was instructed to send a letter to all the doctors in South Dakota before the next legislature meets.

The report of the Committee on Necrology was submitted by Dr. Pankow as follows:

"WHEREAS, In His infinite wisdom our Great Physician has called to Him the following of our friends and brother physicians: John F. Schaefer, Slatthiel E. Hurley, Charles Huff Swett, Henry Jesse Seeman, Elmer Alonzo Jones, Norman Balfour, Robert Douglas Alway, Alonzo Jackson Buffaloe, L. R. Angel, P. D. Bliss and R. F. Dundas, be it therefore

"RESOLVED, That the State Medical Association of South Dakota in regular session go on record as expressing our sincere grief at our loss, and be it

"FURTHER RESOLVED, That a copy of these resolutions be spread on the minutes of this session."

Upon motion made by Dr. Pankow and regularly seconded, the report was adopted.

It was moved by Dr. Pankow, seconded by Dr. Sherwood, and carried, that the Secretary be instructed to express the thanks of the Association to the following firms that contributed to the enjoyment and success of the meeting: Eli Lilly, Power City Drug Company, Minnehaha Floral Company, and the General Hospital Supply Company of Sioux Falls that donated the bag which was raffled off.

Dr. Johnston presented the following as the report of the Nominating Committee:

- | | |
|------------------------------|-------------|
| PRESIDENT ELECT | |
| FIRST DISTRICT | |
| W. A. BATES, M.D. | Aberdeen |
| FOURTH DISTRICT | |
| THEODORE F. RIGGS, M.D. | Pierre |
| VICE PRESIDENT | |
| SEVENTH DISTRICT | |
| J. B. GREGG, M.D. | Sioux Falls |
| THIRD DISTRICT | |
| J. R. WESTABY, M.D. | Madison |
| DELEGATE TO A. M. A. | |
| J. F. D. COOK, M.D. | Langford |
| ALTERNATE TO A. M. A. | |
| L. N. GROSVENOR, M. D. | Huron |

Dr. M. C. Johnston was nominated by Dr. Dunn as Councilor of the first District.

Dr. C. E. Sherwood was nominated by Dr. Hammond as Councilor of the Second District.

Dr. E. B. Taylor was nominated by Dr. Bostrom as Councilor of the Fifth District.

Dr. Fred Treon was nominated by Dr. Ball as Councilor of the Sixth District.

Dr. A. S. Rider was nominated by Dr. Pankow as Councilor of the Seventh District.

It was moved by Dr. Johnston, regularly seconded and carried that the rules be suspended and the Secretary be instructed to cast the ballot of the entire delegation for Dr. W. R. Bates as President Elect.

The result of the ballot cast for Vice President was as follows: Dr. J. R. Westaby, 14; Dr. J. B. Gregg, 8. Dr. J. R. Westaby was elected as Vice President.

Upon motion made by Dr. Pankow, regularly seconded and carried, the rules were suspended and a unanimous ballot was cast for the Delegate and Alternate to the A. M. A., and for the Councilors.

Aberdeen was nominated as the place of meeting for next year, subject to the approval of the North Dakota State Medical Association.

It was moved by Dr. Bostrom, seconded by Dr. Sherwood that the incoming President be requested to appoint a member to act on the Committee on Revision of Course of Study of the South Dakota Department of Education.

There being no further business, the meeting adjourned at nine-ten o'clock.

SCIENTIFIC SESSION

WEDNESDAY MORNING, MAY 21, 1930

The first meeting of the Forty-ninth Annual Session of the South Dakota State Medical Association, held at the Elks Clubs, Sioux Falls, South Dakota, May 20-21, 1930, was called to order at nine-ten o'clock by President L. N. Grosvenor, Huron.

Dr. E. P. Quain, Bismarck, N. D., read a paper on "Prophylactic Gastrostomy." Discussed by Dr. E. L. Tuohy, Duluth, Minnesota, Dr. M. C. Johnston, Aberdeen, and closed by Dr. Quain.

Dr. M. Barron gave a talk on the subject of "Treatment of Heart Failure."

Dr. M. P. Urnes, Chicago, showed moving pictures entitled "Normal and Abnormal Labor."

The meeting adjourned at twelve-thirty o'clock.

SCIENTIFIC SESSION

WEDNESDAY AFTERNOON, MAY 21, 1930

The second meeting was called to order at two-twenty o'clock by President Grosvenor.

Dr. M. P. Urnes, Chicago, discussed the topic, "Toxemias in Pregnancy."

President Grosvenor read his presidential address.

Dr. Cottam placed before the members the matter of group liability insurance. Mr. Jenne, Field Supervisor of the United States Fidelity and Guaranty Company, read a report summarizing the status of the group insurance plan.

Dr. J. R. Gerstley, Chicago, conducted a pediatric clinic.

Dr. Edward L. Tuohy, Duluth, Minnesota, gave a talk on the subject of "Chronic Non-Tuberculous Lung Lesions."

Dr. H. O. McPheeters, Minneapolis, Minnesota, gave a talk on the subject of "Varicose Veins."

GENERAL MEETING

WEDNESDAY EVENING, MAY 21, 1930

The meeting was called to order in the Coliseum at eight-forty o'clock by Dr. L. J. Pankow, Sioux Falls.

The invocation was pronounced by Reverend John F. Robertson, Sioux Falls.

Dr. W. A. Evans, Chicago, was then introduced and gave the annual oration on "Public Health."

The meeting adjourned at ten-five o'clock.

SCIENTIFIC SESSION

THURSDAY MORNING, MAY 22, 1930

The third session was called to order at nine-thirty o'clock by President Grosvenor.

Dr. Harry Herman Bowling, Rochester, Minnesota, read a paper on "Results Obtained by Irradiation Therapy in Carcinoma of Cervix Uteri." Discussed by Dr. P. D. Peabody, Webster, Dr. M. A. Stern, Sioux Falls, and closed by the essayist.

Dr. W. A. Dawley, Rochester, Minnesota, read a paper on "General Considerations of the Surgical Thyroid."

Dr. Ernest Edward Irons, Dean of the Rush Medical College, Chicago, Illinois, gave a talk on the topic, "Some Factors in the Diagnosis and Treatment of Chronic Arthritis."

The meeting adjourned at twelve-ten o'clock.

SCIENTIFIC SESSION

THURSDAY AFTERNOON, MAY 22, 1930

The fourth meeting was called to order at one-fifty o'clock by President Grosvenor.

Secretary Cook gave a report of the meeting of the House of Delegates.

The Memorial Exercises then took place, Dean Woodruff giving the invocation, Dr. S. M. Hohf reading the roll call of deceased members and physicians and giving the eulogy, and the benediction being pronounced by Dean Woodruff.

Dr. Harold Eugene Robertson, Rochester, Minnesota, gave a talk on "Observations on the Pathology of the Spleen."

Dr. Donald Macrae, Council Bluffs, Iowa, gave a talk on "Drainage of the Intestinal Tract." Discussed by Dr. Emil C. Junger, Soldier, Iowa, and closed by Dr. Macrae.

Dr. David M. Blum, Des Moines, Iowa, gave a talk on "Syphilis."

The meeting adjourned at five-fifteen o'clock.

BOARD OF COUNCILORS

TUESDAY EVENING, MAY 20, 1930

The first meeting of the Board of Councilors of the South Dakota State Medical Association, at the Forty-ninth Annual Session, was called to order at the Cataract Hotel, Sioux Falls, at 8:15 P. M., Tuesday, May 20, 1930, by the Chairman of the Board, Dr. Frederick Treon, of Chamberlain.

The following were present:

SECOND DISTRICT

H. W. SHERWOOD, M.D.

THIRD DISTRICT

J. R. WESTABY, M.D.

FOURTH DISTRICT

A. A. McLaurin, M.D.

FIFTH DISTRICT

E. B. TAYLOR, M.D.

SIXTH DISTRICT

FRED TREON, M.D.

SEVENTH DISTRICT

R. W. MULLEN, M.D.

EIGHTH DISTRICT

S. M. HOHF, M.D.

(Acting in place of J. A. Hohf)

TENTH DISTRICT

H. R. KENASTON, M.D.

ELEVENTH DISTRICT

A. E. BOSTROM, M.D.

The Basic Science Bill was then taken up and discussed by the following: Drs. S. M. Hohf, J. F. D. Cook, H. W. Sherwood, E. B. Taylor, W. A. Bates, M. C. Johnston, P. D. Peabody, A. A. McLaurin, L. J. Pankow and R. W. Mullen.

Further discussion ensued and was participated in by Drs. Westaby, Pankow, Bostrom and Mullen.

Upon motion made by Dr. McLaurin, seconded by Dr. Sherwood, and carried, the meeting adjourned at nine fifty-five o'clock.

BOARD OF COUNCILORS

THURSDAY MORNING, MAY 22, 1930

The second meeting was called to order at 9:10 o'clock by Chairman Treon.

The following were present:

FIRST DISTRICT

M. C. JOHNSTON, M.D.

SECOND DISTRICT

H. W. SHERWOOD, M.D.

THIRD DISTRICT

H. A. MILLER, M.D.

FOURTH DISTRICT

A. A. McLaurin, M.D.

FIFTH DISTRICT

E. B. TAYLOR, M.D.

SIXTH DISTRICT

FRED TREON, M.D.

SEVENTH DISTRICT

A. S. RIDER, M.D.

EIGHTH DISTRICT

J. A. HOHF, M.D.

NINTH DISTRICT

N. T. OWEN, M.D.

ELEVENTH DISTRICT

A. E. BOSTROM, M.D.

Secretary Cook read the minutes of the previous meeting. Upon motion by Dr. Johnston and regularly seconded the minutes were adopted.

Secretary Cook read a communication from Dr. Jones in regard to the JOURNAL-LANCET. Upon motion made by Dr. Sherwood and seconded by Dr. Rider, it was voted to elect Dr. C. William Forsberg of Sioux Falls as an associate editor of the JOURNAL-LANCET.

It was moved by Dr. Johnston, seconded by Dr. Owen and carried that the selection of another associate editor be left to the officers of the State Association.

Upon motion regularly made and seconded, the meeting adjourned at nine twenty-five o'clock.

REPORT OF SPECIAL COMMITTEE ON MEDICAL EDUCATION

To the House of Delegates:

On April 7, 1930, the committee on Medical Education made a visit to the Medical School of the University of South Dakota. We beg to submit the following report:

Your committee was cordially received by President James of the University of South Dakota, Dean G. R. Albertson, M.D., Professor J. C. Ohlmacher, M.D., and faculty of the Medical School. We found the faculty to be gentlemen and scholars and deeply interested in their work. It is our opinion that their personal influence upon the students is for the very best.

The Medical School of the University of South Dakota was instituted in 1907 and is now in its twenty-third year of service to the people of the State. Owing to the lack of clinical facilities, only the first two years of the medical course are given in South Dakota and the students then take the last two years at other institutions having these clinical facilities. In the history of the School, no student who has completed the first two years of his medical work there has failed to find a satisfactory location in a class A medical school for the completion of his work nor has any such student thus located ever failed to successfully complete the last two years of his medical training.

The Medical School of our State University is a member of the Association of American Medical Colleges and is rated in class A by the Council on Medical Education of the American Medical Association. The work done here is

recognized by the licensing boards of all of the states and is accepted at face value by the leading medical schools of the county.

In the twenty-three years of the existence of the Medical School, a total of 346 students have been in attendance and of these, 200 have completed their second year of medical work. Of these 200 students, 139 are in the practice of medicine, 50 are still taking the work of the third, fourth, and internship years, 6 are dead, 2 are teaching in non-medical schools, 2 are teaching in the Medical School of the State University before completing their medical training, and 1 cannot be located. A very small percentage of the 99 students who took only a part of the work of the first two years at South Dakota, completed the remainder of their medical work at other institutions and are now in the practice of medicine. Forty-seven of the total enrollment of 346 students are this year registered at the University of South Dakota.

The enrollment in the School of Medicine for the past four years shows a total of 103 Freshmen and 85 Sophomores or an average yearly enrollment of 47 students. Of the 85 Sophomores registered in the past four years, 72 have or will have, by the close of this school year, successfully completed their work at the University. Under present conditions approximately twenty per cent of those who start the study of medicine there do not complete the second year of their work but drop out for various reasons, the most prominent of which are poor scholarship, adverse financial conditions, and lack of interest. Approximately ten per cent of the registrants fail to continue the study of medicine because of a failure to successfully carry the work. Under present conditions the percentage of failures is considerably less than in the past owing to the greater care exercised in the selection of students which is made possible by the limited classroom facilities and the large number of applicants for places in the classes. The normal capacity of the School provides for twenty-four students in each of the two classes though a few additional students may be accommodated in the first year class.

Approximately two-thirds of the beginning class in medicine each year—16 to 18 students—are South Dakota residents, and this number constitutes about fifty per cent of the total number of South Dakota residents who begin the study of medicine each year. Thus only fifty per cent of South Dakota's beginning medical students each year are taking advantage of the

facilities offered them to obtain the first two years of their medical training in their own state. We believe that this percentage should be increased and that it would be increased if the advantages, educational as well as financial, of attending their own Medical School were more generally known to them. Carefully compiled figures reveal that the cost to the State of South Dakota to educate each medical student is only five-sevenths of the cost borne by the average medical school of the United States for a corresponding service and that the cost to each South Dakota student in our South Dakota Medical School is only seven-tenths of that for the student in the average medical school outside of our state. Seven hundred dollars is a sufficient amount to pay the reasonable expenses of a medical student for one school year in South Dakota, while a corresponding time spent in other medical schools cost at least \$1,000 per year. The educational advantages to be found in South Dakota's Medical School are such as are made possible by a small student body under the direct personal supervision of the heads of the various departments. As no spirit of school loyalty prevents criticism of our departments by other institutions, the heads of the departments in our medical school realize that their work must, as shown by the proficiency of their students, stand the test of comparison with departments of other institutions. A comparison of the average grades received by the students in the schools in which they finished their work was made covering the years from 1926 to the present time and the results of this comparison show that our students received in these other schools grades averaging three per cent higher than they received in our own institutions. Such a practical test gives us concrete evidence of the character of work done in South Dakota.

The records show that South Dakota students have come from twenty-three states and five foreign countries and that they finally return to as wide a field. The majority come from South Dakota and its neighboring states and return to South Dakota and its neighboring states for the practice of their profession. At the present time 28 of the 139 South Dakota medical students who have completed their training are practicing in South Dakota. Judging from the average number of medical men taking the examinations of our State Licensing Board each year, forty new medical practitioners are needed in the State each year and while we might, perhaps, wish that more of these new practitioners might

be our own South Dakotans, we must realize that we do not complete their training and that they, at that time in their lives when they are most seriously considering their future locations, are in some other state and under other than South Dakota influences.

The South Dakota Medical School has placed its students in twenty-two different institutions including many state universities, city, and independent schools, and many of these schools now have our graduates on their faculties. Twenty-one of our students have held and many still hold teaching positions in medical schools, the most notable of these, perhaps, being Alton W. Ochsner, Professor of Surgery at Tulane University Medical School and Clarence A. Mills, Associate Professor of Internal Medicine at the University of Cincinnati College of Medicine.

Medical education is constantly undergoing changes. Emphasis gradually shifts from subject to subject, new courses are added and subjects are changed from one place to another in the curriculum. No two schools follow exactly the same pattern in medical education; the curriculum of one may be very different from that of another. While this is a condition to be desired and results in accomplishments in medical education through experimentation, organization and the putting into practice the latest thoughts of educators, it also presents problems which must be met by the schools conducting only the first two years of medical work. It is, of course, necessary that corresponding changes occur in two year schools. These schools must adapt themselves to the changing conditions and continue to fit their students for entrance to the clinical years of other schools. Our students must be so trained as to enable them to enter any one of many different schools and consequently our curriculum or courses of study must correspond as nearly as possible with those of as large a number of clinical schools as possible. The tendency in recent years has been to condense the laboratory sciences taught in the first two years of the medical course and intermingle with them certain short or introductory courses in surgery, internal medicine, obstetrics and other so-called clinical subjects. Because it is possible to allot so little time to these clinical courses in the first two years of medicine, they are usually considered as "general interest" courses given primarily for the purposes of stimulating student interest and bridging the gap or coordinating or linking the laboratory with the

clinical courses. At our University these purposes have been, we think, well served by requiring the attendance of the whole student body at four medical society meetings each year. However, in addition to this we feel that the School of Medicine should add to its curriculum short courses in Clinical Pathology, Internal Medicine, and Obstetrics in order to avoid the possibility of handicapping and placing an unnecessary burden on our students when they enter, with shortages, certain finishing schools that require these courses.

Together with all of the departments of the University, the School of Medicine has suffered greatly by the too rigid economy program made necessary by the budget reduction of recent years. Additional lecturers should be employed to conduct the new course work previously mentioned. Departmental operating budgets have been pared to such an extent that new equipment could be obtained rarely if at all. The library is becoming out of date and should be built up especially on the side of current journals, and technical and janitorial assistance should be increased as teachers now spend too much time in this sort of work. In all, an addition of \$5,000 to the present budget for the medical school is badly needed and, with this increase, the total budget would still be materially less than that used by the average medical school for a corresponding number of students.

We have carefully and personally examined the School of Medicine of the University of South Dakota and have found that, to the best of our knowledge and belief, the information given in this report is correct and subject to verification through available and authentic records on file at the University, that the needs of the Medical School as expressed in this report are real and that their correction is necessary to the continued well being of the students of the School. We are assured that the School of Medicine has always enjoyed an excellent reputation and, with the coöperation of the people of the State of South Dakota, will be kept on a high level of attainment at a reasonable cost to the State and to the South Dakota students who desire to obtain a first class medical education.

As shown by this survey of the Medical Department of the University of South Dakota, it is very apparent that we have a real live Medical School at Vermillion. The faculty is doing all that is possible with the rigid economy necessitated by small appropriations, to keep abreast of the times and meet the requirements of the larger universities.

Much progress has been made during the past ten years in the various branches of medicine, requiring equal advances in the curriculum of the School of Medicine. Your committee believes that it is necessary to increase the faculty and the equipment of the school so that it will meet all the requirements of other schools to which our students must go for the last two years of their clinical course.

The School of Medicine is only a small part of our University, and yet the Medical School is surely one of the most necessary departments, as our State requires many young doctors to replace the older ones, who are retiring from practice due to old age or death.

It has been shown during recent years that the first two years of the medical course are the most crowded. All State Universities admit students from their own state first and then fill in the remaining vacancies from other than their own state. All Medical Schools are limited as to the number of students they can accommodate; however, during the first two years, some of their students drop out for various reasons and thus are created vacancies for students from the two year schools like the South Dakota School.

All of the Medical Schools have many more applications for admission to the first year classes than they can accommodate. There seems to be no difficulty in our students getting into the third year of Medicine in the larger schools, provided they have the proper credits and have had the courses required by these schools.

Certainly the State of South Dakota owes our South Dakota boys a chance to enter the Medical profession and by keeping our school up to the proper standard is the only way that it can be done. The Committee feels that an increase of \$5,000 to the annual budget of the school of Medicine of the University of South Dakota is necessary to the continued well being of the School and would recommend that the physicians of the State make themselves acquainted with the school and its teaching staff in order to assist to as great an extent as possible in its advancement.

COMMITTEE

T. F. RIGGS, M.D.

Johns Hopkins University School of Medicine

C. E. ROBBINS, M.D.

Harvard University Medical School

W. A. BATES, M.D.

Keokuk Medical College

J. M. WALSH, M.D.

University of Illinois College of Medicine

J. F. D. COOK, M.D.

University of Illinois College of Medicine

SECRETARY'S REPORT

J. F. D. Cook, M.D., Secy.-Treas.

South Dakota State Medical Association.

To the House of Delegates:

Having adopted a new constitution and by-laws at the last session, we are now working under a forward program.

We believe the new constitution and by-laws does protect most carefully the rights of individual members. However, it specifically delegates authority to the various officers and committees, who are responsible for the particular duties and activities delegated to them by the constitution and by-laws.

You will note that the constitution and by-laws provides that the president of the Association has more of an honorary than a particularly authoritative office. It is necessary that we have a president and we are glad to have honored him. He is the presiding officer and has the appointment of men to the various committees. The committees are continuing, as the term of office is for three years. One new member appointed each year makes the committees able to promote a forward looking program because of the continuity that this policy provides.

The destinies of the Association are to be guided by the Council and House of Delegates. In that way, policies are elaborated in the council, of which body the president is a member, and these policies are carried through no matter who may be president. The same deductions apply to the various standing committees, that studies and policies shall be elaborated and that work shall go on, no matter whose term of office expires, on the various committees.

Dr. Olin West, Secy. A. M. A., says, "This question of the working personnel of the organization is one of tremendous importance. In my judgment, you are not going to get anywhere if your committees that are supposed to do work are haphazardly chosen. Don't put this, that or the other man on because he entertained you the last time you were around or did some other nice thing for which you feel like patting him on the back. There ought to be hard-boiled selection of the working personnel of the state association

or any other association with just one thing in view—to get efficiency.

"When you get that everything else will be taken care of. Select the man who works under any and all conditions, who is representative of the best in medicine."

LEGISLATION

It is interesting to note, in going over the records of this Association which had its birth at Milbank, Dakota Territory, in 1882, that the foremost medical men of the Territory met and carried on scientific programs, showed a vital interest in the prevention of, and the spread of communicable diseases, made resolutions, which were submitted to the Territorial Governors outlining the needs of the Territory in Public Health Program, asking that a Board be authorized in Public Health and Medical Licensure to adequately control the communicable diseases, and regulate the practice of medicine within the territory. The adoption of such laws, rules and regulations as would be beneficial to the public welfare, and the protection of human life in the Territory of Dakota.

To refresh the memory of some of the older men and to inform the younger men of some of the opposition that this Association has met in the past, a citation from the Bulletin of the State Board of Health Volume 11, No. 6, page 3, April 1, 1923.

This citation is a definite challenge to organized medicine as exemplified in the workings of our Association, which is a democratic organization. This anamos may explain the attitude of some of those who at the last legislative session opposed the Legislative Program of this Association.

"The Board met again at Pierre in January, 1913. While the legislature was in session, to discuss the proposed laws.

"They found on arrival that the political ring of the State Medical Association was about to introduce a bill without even consulting the members of the State Board of Health; this bill did little to remedy the present inadequate law, in fact about the only change was the payment of the Board members, amalgamating the Boards of Health and Medical Examiners, and its main object, control of the amalgamated board by the political ring above referred to. They were in such indecent haste to obtain control, that an emergency clause was attached."

LEGISLATIVE

Mimeographed copies of proposed legislation that came to my office have been mailed to the component societies for their information. A copy was submitted to the Bureau of Legal Medicine A. M. A. for their reaction and advice. Dr. Woodward made a report, a copy of which you will find attached to the proposed Osteopathic bill. Evidently this will be presented by the Osteopathic organization in some form, at the next Legislative session in 1931.

You will also find a copy of the Basic Science Bill proposed by your committee for introduction at the last session of our legislature, and withdrawn because of opposition by a group of men in the Black Hills District.

Dr. Woodward gave me an opinion of this bill which is also submitted for your information. You will note that he particularly objects to the composition of the board as defined in the bill.

A copy of a Basic Science Bill patterned after the model, as outlined by A. M. A. was sent you. This is the original bill from which the 1928 bill was developed.

This type of bill will meet the needs of our state and make it possible to have reciprocal relations with states adopting Basic Science Laws.

"A survey of Federal and State Legislation proposing to regulate further the practice of the healing art and the rights and duties of practitioners." Found in the February, 1930, Federation Bulletin and reprinted from the American Medical Association Bulletin of October, 1929, should be carefully studied by all. This survey gives clearly and concisely the situation in the various states. It is too lengthy a report to incorporate in this report.

THE PORTER NARCOTIC BILLS

Coöperation with Legal Bureau of A. M. A. has been carried out as per request. Also the Jones-Cooper Maternity and Infancy Bills. The opposition to lay control of such measures has been stressed. All Public Health measures should be under the Department of U. S. Public Health, and supervision of the Surgeon General and Staff.

THE COMMONWEALTH FUND N. Y.

Division of Public Health

Their letter and plans are submitted for the consideration of the House of Delegates.

District Medical Society

Miner County District in a letter from the Councilor surrender their charter. The letter is explanatory.

COMMITTEE

If committee reports could be in the hands of the Secretary 60 days before the annual meeting, copies could be placed in the hands of the Delegates for their consideration. This plan would give the Delegates time to formulate constructive recommendations based on personal experience and information, would give time for deliberate study of the problems presented. As medical men we are often confronted with problems that require instant decision as to the procedure in a given problem. However, it is far more satisfactory to have time for deliberate study to work out ideas and methods of procedure.

HONORARY MEMBERS

Aberdeen District nominated Drs. F. M. Crain of Redfield, S. D., L. F. Michael, San Diego, Calif.

Sioux Falls District: Dr. G. H. Fulford, Dr. H. W. Subera, Dr. Wm. McK. Houseman, Dr. A. H. Tufts, and Dr. Dott.

DELEGATES AND ALTERNATES

A. M. A.—SEATING OF
DELEGATES

A. M. A. Constitution in article 5, section 2, specifically provides that the House of Delegates is to be composed of delegates elected by constituent associations. Chapter 1, section 1, of the by-laws requires that a delegate must have been a Fellow for at least two years. The following amendment was presented and lost:

"When neither the delegate nor an alternate who is elected by his constituent state association is able to attend a session of the House of Delegates, the president or secretary of the said constituent state association shall have the power to appoint a delegate from his state association to fill the vacancy.

"If our state association is to be represented it is necessary that our delegate be chosen according to the A. M. A. Constitution and By-laws."

U. S. F. and G.

The list received from the Minneapolis office of the company shows that 104 men are carrying insurance. This is an increase over last year.

DEATHS

Eleven deaths of physicians have come to my notice in the state. During the year nine were members of State Associations. One Past-President.

- *John F. Schaefer, age 59, Aug. 3, 1929, Colome, S. D.
 - *Slathiel E. Hurley, age 80, Aug. 28, 1929, Gettysburg, S. D.
 - *Charles Huff Swett, age 50, Aug. 28, 1929, Wagner, S. D.
 - *Henry Jesse Seeman, age 65, Sept. 6, 1929, Rockham, S. D.
 - *Elmer Alonzo Jones, 59, Sept. 17, 1929, Sioux Falls S. D.
 - *Norman Balfour, age 47, Nov., 1929, Hot Springs, S. D.
 - **Robert Douglas Alway, age 61, Dec., 1929, Aberdeen, S. D.
 - *Alonzo Jackson Buffalo, 71, Jan. 31, 1930, Mitchell, S. D.
 - L. R. Angel, age 45, March 19, 1930, Montrose, S. D.
 - *P. D. Bliss, age 60, March 22, 1930, Colton, S. D.
 - R. F. Dundas, April 11, 1930, Mitchell, S. D.
- *Member.
**Past-President.

WOMEN'S AUXILIARY

Adopted a new Constitution and By-Laws last year to meet the needs of state organization. This provides for an organization in each district medical society.

The Women's Auxiliary was organized at Hot Spring, S. D., during the meeting of the State Medical Association in 1910.

It is my opinion that our Auxiliary is the senior auxiliary in the U. S.

Respectfully submitted,

J. F. D. Cook, M.D.

Cash Received

1929	
May 7, Balance	\$2,488.26
May 11, Kingsbury County	20.00
May 11, Rosebud District	10.00
May 13, Madison District	20.00
May 13, Madison Legislative Fund.....	10.00
May 14, Mitchell District	30.00
May 18, Sioux Falls District	20.00
May 18, Black Hills District.....	10.00
July 12, Black Hills District	10.00
July 25, Sioux Falls District	90.00
July 29, Whetstone Valley District.....	10.00
July 31, Yankton District	10.00
August 6, Yankton District	10.00
August 8, Yankton District	10.00
August 12, Black Hills District	10.00
August 20, Sioux Falls District.....	20.00
September 5, Madison District	20.00
September 10, Mitchell District	20.00
September 10, Watertown District	20.00
September 13, Aberdeen District	10.00
September 14, Sioux Falls District.....	40.00
September 19, Aberdeen District	10.00
October 2, Madison Legislative Fund.....	5.00
October 2, Whetstone Valley District	10.00
October 7, Sioux Falls District	10.00
November 1, Mitchell District	10.00
November 1, Kingsbury County District.....	10.00
November 9, Sioux Falls District.....	10.00
December 16, Aberdeen District	10.00
December 16, Whetstone Valley District.....	10.00

1930

January, G. E. Burman.....	30.00
February 15, Whetstone Valley District.....	90.00
February 15, Whetstone Valley District.....	10.00
February 24, Rosebud District.....	90.00
March 1, Watertown District	260.00
March 1, Huron District	170.00
March 14, Yankton District	10.00
March 14, Yankton District	340.00
March 17, Yankton District	10.00
March 27, Yankton District	10.00
March 31, Yankton District	10.00
April 1, Whetstone Valley District.....	10.00
April 10, Pierre District	80.00
April 10, L. G. Hill.....	20.00
April 10, Kingsbury County District.....	60.00
May 2, Kingsbury County District.....	30.00
May 6, Kingsbury County District.....	10.00
May 7, Whetstone Valley District.....	10.00
May 14, Madison District	130.00
May 15, Huron District	30.00
May 20, Aberdeen District	580.00
May 20, Sioux Falls District.....	500.00
May 23, Rosebud District	10.00
May 31, Mitchell District	240.00
May 31, Black Hills District.....	290.00
TOTAL	\$6,003.26

Disbursements

1929	
May 7, Peterson Sign Co., No. 124.....	\$ 12.00
May 8, Elks Cafeteria, No. 125.....	21.00
May 9, Mrs. Norton, Reg., No. 126.....	13.00
May 9, Navin Hotel, No. 127.....	12.00
May 10, Widman Hotel, No. 128.....	26.75
May 12, Siebrecht (Flowers) No. 129.....	15.00
May 16, L. F. Curfman (Messages) No. 130.....	5.76
May 16, E. W. Jones local com. No. 131.....	23.02
May 20, Farrars, Supplies, No. 132.....	5.75
May 21, N. K. Hopkins (Leg. Exp.) No. 133.....	87.28
May 22, L. Miles (Envelopes) No. 134.....	11.12
May 24, L. Miles (Stamps) No. 135.....	1.04
May 24, Miss Curfman (Mimmeog.) No. 136.....	7.50
May 28, L. Miles (Stationery) No. 137.....	21.50
June 9, L. T. Co. Phone L. D., No. 138.....	.90
June 29, J. F. D. Cook, No. 139.....	50.00
June 8, Journal-Lancet, No. 140.....	387.00
June 8, Master Reporting Co., No. 141.....	398.81
June 14, A. M. A. Directory, No. 142.....	12.00
Sept. 27, Com. State Bank (Bonds) No. 143.....	2.50
Sept. 24, J. F. D. Cook, No. 144.....	100.00
Oct. 26, J. F. D. Cook, No. 145.....	50.00
Oct. 28, Journal-Lancet By-Laws, No. 146.....	45.75
Oct. 4, L. Curfman (Messages) No. 147.....	1.06
Nov. 23, Journal-Lancet, No. 148.....	352.00
Nov. 23, J. F. D. Cook, No. 149.....	200.00
Dec. 4, L. N. Grosvenor, No. 150.....	31.97
Dec. 17, L. Miles P. M., No. 151.....	18.85
Dec. 17, J. F. D. Cook, R. R. Fare, No. 153.....	27.07
Dec. 18, Huffman Co. (Mimmeog.) No. 154.....	71.00
Dec. 27, Siebrecht Florist, No. 155.....	15.00
Dec. 31, Curfman Agt., W. Union, No. 156.....	6.30
1930	
Feb. 18, Phone Messages, No. 157.....	2.10
March 11, Curfman, W. Union, No. 158.....	.60

March 29, J. F. D. Cook, No. 159.....	50.00
March 31, L. Miles (Envelopes) No. 160.....	25.14
April 3, The Lilly Co. (Badges) No. 161.....	37.73
April 10, L. N. Grosvenor, No. 162.....	14.60
April 30, Huffman Co. (Supplies) No. 163.....	11.75
May 10, Programs and Ptg., No. 164.....	125.75
May 12, Farrar (Mimneo. Paper) No. 165.....	8.05
May 20, J. F. D. Cook, No. 166.....	150.00
May 12, Stamps, No. 167.....	5.00
May 12, Express Badges, No. 168.....	1.11
May 22, Miss Flanagan (Ry.) No. 169.....	5.00
May 22, Miss Billion (Ry.) No. 170.....	5.00
May 23, Cataract Hotel, No. 171.....	109.40
May 23, Flowers, No. 172.....	5.00

TOTAL\$2,614.59

May 7, 1929, Cash balance.....	\$2,488.26
Dues for 1929 received since last report.....	500.00
Legislative fund received since last report.....	15.00
Dues for 1930	3,000.00

\$6,003.26

Expenditures2,614.57

BALANCE, May 31, 1930.....\$3,388.69

MEMBERSHIP BY DISTRICTS

District 1.....	58	District 8.....	37
District 2.....	26	District 9.....	29
District 3.....	13	District 10.....	10
District 4.....	8	District 11.....	11
District 5.....	20	District 12.....	12
District 6.....	24	District 13.....	3
District 7.....	50		

PRESIDENT'S ADDRESS

BY LORENZO N. GROSVENOR, M.D.

HURON, SOUTH DAKOTA

On this occasion I wish, on behalf of the members of the South Dakota State Medical Association, to extend to our guests, the members of the Sioux Valley Medical Association, a most sincere and hearty welcome to our meetings and to all its privileges. We trust that this will be a most profitable meeting to every one of you.

This occasion presents an opportunity for our South Dakota Fellows to extend their good fellowship to the Fellows from our surrounding states, and brings to all the realization that there are two meetings of the Sioux Valley Medical Association every year; in January, at Sioux City, and in July, at Sioux Falls. They always have very fine and profitable programs. This year they are having their summer meeting with us. We, of South Dakota, are powerful glad to have you with us.

For the first time in twenty years we miss the presence with us today of our dearly be-

loved and most active worker for medicine in South Dakota, Dr. Robert Douglas Alway, of Aberdeen. For seventeen years he served as Secretary-Treasurer of this, our State Medical Association; for the years 1906-1919. As President in 1920. Again as Secretary-Treasurer in 1922-1925. Since then he has served as Councilor of his Aberdeen District.

"He was the man behind the gun." He it was who developed and "made" the South Dakota State Medical Association. We shall miss him more than tongue can tell.

During the past year, your President and Secretary have made "visitations" to all but two of the component societies. This has been very helpful to the individual members of the local societies as well as to the officers in promoting better mutual understanding of each other and their needs.

The programs presented at these various meetings were fine and drew out much worth while discussion of the papers. The attendance at these district meetings was large in proportion to the total membership in the district. In two of these meetings all the members were present.

The chief aim of our various Medical Society Meetings (District, State, Sectional and National) is to combat disease.

To progress we must keep up with the new ways and means developed in the diagnosing and treating of sick folks. One cannot go to a single meeting without picking up at least one new idea that will be helpful. The gathering together about the supper table and rubbing elbows with your fellow doctors, discussing your troublesome cases, is a great privilege and advantage to each of you, promotes better acquaintance with your Fellows and you find, after all, that he is not such a bad fellow as you expected. Our Medical Faculty at our State University at Vermillion is inculcating this idea into their medical students, by having them attend every medical meeting possible. I expect there are many of them here for this meeting.

To those of you who are county health officers I urge upon you to handle your work tactfully and thoroughly. Be honest with yourself, with your conferees and with the public. Do not be an "Anarchist." "An anarchist is a man who does not believe in law when it opposes his convenience." Hence, I say, respect the laws laid down by your State Board of Health and so guard and protect the homes of your community.

There is much controversy and publicity being broadcast as to the high cost of sickness. Well,

let us look over the conditions of a few years ago.

A doctor, located in one of our thriving towns, receives a telephone call to come out twenty miles to see farmer Smith. He gets into his horse and buggy or early type "Lizzie" and drives out the twenty miles and finds the farmer himself sick abed. The doctor makes a thorough examination and diagnosis of pneumonia. He tells the family that he will have to have a trained nurse and I shall have to come out every day. The doctor drives out daily, through all kinds of weather, and, with the watchful care of the nurse, clears up the case.

Now, then, count up the cost: The doctor makes at least 12 visits, each 20 miles at \$1 per mile, plus service at \$3 per= $\$23$ per visit times 12= $\$276$. The nurse—14 days at \$5 per day= $\$70$, a total of \$346.

Nowadays, the doctor would bundle up the patient and put him in his closed car and take him to the hospital, quicker. Here he can give him a great deal better and more efficient care. Count up the cost. The doctor makes 15 hospital calls at \$3 per= $\$75$. Special nurse gets at least \$7 per day for 14 days= $\$98$. Hospital fees for 15 days at \$5 per day= $\$75$, making a total expense of \$250. Present-day service is about \$100 less. The old time doctor graduated after two or three years medical college. The present day doctor has to have four years medical college and one year as hospital interne before he gets his diploma. Years ago a well equipped hospital could be built at a cost of about a \$1,000 per bed. Nowadays, a well equipped fireproof hospital costs about \$5,000 per bed. The overhead upkeep expense has increased accordingly. Also, the patients demand more detailed care and service. The cost to the hospital is at least about \$5 per bed per day.

Twenty to thirty years ago we never thought of taking obstetric cases to a hospital. My good father, in the last ten years of his general practice in Chicago, took care of 200 obstetric cases a year but always in the homes.

As to operating fees. Thirty years ago we Rush students were taught to charge for operations according as the patients were able to earn, that is, for major operations, one month's income to be your fee, be it \$50 or a \$1,000. Other operations in proportion.

Now a quotation from A. M. A. Secretary Dr. Olin West, "High pressure salesmanship is a part of our economic system of today and in consequence, the last dollar of the ordinary man is tied up through the installment plan of buying

and selling. Therefore, when we talk about the high cost of medical care we must take into consideration the whole economic system as it exists today, and study and analyze it carefully. The cost of medical care is a mere speck on the economic map." We doctors have to take our chances on collecting whatever we charge.

Now as to the care of the children of our state.

In my city of Huron, during the past four years, the school children have been carefully examined at stated times by our doctors. The school nurse and the superintendent of schools reports that more than 800 defects have been corrected in this time. This all helps in promoting better physical condition of the future citizens. Just such examinations and corrections have been accomplished in most all of our schools throughout the state. Last week we doctors examined over 100 young children of pre-school age to help get them ready for entrance to school next fall.

As to what has been done this past year by the officers and committees of your State Medical Association will be presented to your House of Delegates at their meetings and later will be published in the JOURNAL-LANCET.

In closing I want to quote the Scientific Creed expounded by Dr. Harris P. Mosher, of Boston.

"If medicine is not your greatest fun, you are at the wrong job. Watch the clock and you will often miss the train. Overtime is opportunity. The cases from which you learn the most come on Sundays, holidays and nights. The greatest satisfaction of a medical career is the acquaintance of the men who are doing things and being counted by them "one of the gang." Meet the busy men and take their overflow jobs—scientific jobs, I mean. Join a medical society of national scope and go to its meetings. Get a hospital connection. Never resign. Work to the age limit. It will come quick enough. To spend a medical life doing nothing but private practice numbs the soul and kills the imagination. Set aside a stated time—I take an evening a week—for scientific medicine. Spend it in your library, the hospital library or in a laboratory. Come to an understanding with the family about it, peacefully if you can, by force if necessary. Read regularly something worth while besides medicine. Often, in such reading, words, phrases and even ideas which can be used in medicine will literally jump at you. Make yourself better than the men of your community in at least one thing. What this medical thing is—notice I say medical—matters but little."

DISTRICT AND COUNTY ROSTER

ABERDEEN DISTRICT MEDICAL SOCIETY—NO. 1

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Calene, J. L.Aberdeen		King, H. I.Aberdeen	Twining, G. H.Mobridge
Cook, J. F. D.Langford		King, OwenAberdeen	Walker, J. F.Bison
Cooley, F. H.Redfield		Kraushaar, F. J. O.Aberdeen	Whiteside, J. D.Aberdeen
Countryman, G. E.Aberdeen		Kutnewsky, J. K.Redfield	Whitney, L. D.Aberdeen
Crain, C. F.Redfield		Larson, A. J.Mobridge	Wilson, R. D.Aberdeen
Crain, F. M.Redfield		Lowe, C. E.Mobridge	Wolfe, F. E.Britton
Creamer, Frank H.Dupree		Lundquist, C. G.Leola	
		McCarthy, P. V.Aberdeen	

WATERTOWN DISTRICT MEDICAL SOCIETY—NO. 2

PRESIDENT		Christenson, A. H.Clark	Nelson, E. N.Watertown
Sherwood, H. W.Doland		Freeburg, H. M.Watertown	Paulson, A. J.Watertown
SECRETARY		Hammond, M. J.Watertown	Richards, G. H.Watertown
Richards, G. H.Watertown		Johnson, A. EinarWatertown	Rowe, A. N.Esteline
Ash, J. C.Garden City		Kenney, H. T.Watertown	Scallin, P. R.Clark
Bartron, H. J.Watertown		Koren, FinnWatertown	Sherwood, H. W.Doland
Bates, J. S.Clear Lake		Lockwood, J. H.Henry	Staley, F. H.Vienna
Brown, H. R.Watertown		McIntyre, P. S.Bradley	Tarbell, H. A.Watertown
Campbell, R. F.Watertown		Magee, W. G.Watertown	Vaughn, J. B.Castlewood
Crawford, J. H.Watertown		Martin, P. T.Gary	Williams, C. A.Doland

MADISON DISTRICT MEDICAL SOCIETY—NO. 3

PRESIDENT		Davidson, MagniBrookings	Kellogg, H. E.Brookings
Green, B. T.Brookings		Engelson, C. J.Brookings	Miller, H. A.Brookings
SECRETARY		Green, B. T.Brookings	Sherwood, C. E.Madison
Baugman, D. S.Madison		Guldbrandson, G. H.Brookings	Tillisch, H.Brookings
Davidson, MagniBrookings		Hoagland, C. C.Madison	Westaby, J. R.Madison
		Jordan, L. E.Chester	Youtz, H. L.Des Moines, Ia.

PIERRE DISTRICT MEDICAL SOCIETY—NO. 4

PRESIDENT		Hart, B. M.Onida	Northrup, F. A.Pierre
Riggs, T. F.Pierre		McLaurin, A. A.Pierre	Riggs, T. F.Pierre
SECRETARY		Martin, H. B.Harrold	Robbins, C. E.Pierre
Robbins, C. E.Pierre		Morrisey, R. J.Minneapolis	Stout, Trent E.Pierre

HURON DISTRICT MEDICAL SOCIETY—NO. 5

PRESIDENT		Griffith, W. H.Huron	Shirley, J. C.Huron
Saxton, W. H.Huron		Grosvenor, L. N.Huron	Sigler, G. V.Highmore
SECRETARY		Hagin, J. C.Miller	Sprague, B. H.Huron
Griffith, W. H.Huron		Launspach, G. W.Huron	Taylor, E. B.Huron
Buchanan, R. A.Wessington		Mattlock, W. L.Huron	Thomas, Benj.Huron
Cogswell, M. E.Wolsey		Paddleford, J. F.Miller	Tschetter, J. S.Huron
Faust, J. H.Huron		Saxton, W. H.Huron	Wood, T. J.Huron
Gregory, D. A.Miller		Saylor, H. L.Huron	Wright, O. R.Huron
		Sewell, H. D.Huron	

MITCHELL DISTRICT MEDICAL SOCIETY—NO. 6

PRESIDENT		Cochran, F. B. Plankinton	Kelly, R. A. Mitchell
Mabee, C. J. Mitchell		Crawford, R. A. Chamberlain	Kimble, O. A. Murdo
SECRETARY		Delaney, W. A. Mitchell	Lloyd, J. H. Mitchell
Malloy, J. F. Mitchell		Dick, L. C. Spencer	Malloy, J. F. Mitchell
Auld, C. V. Plankinton		Gifford, A. J. Alexandria	Payne, R. H. Tripp
Ball, W. R. Mitchell		Gillis, F. D. Mitchell	Stewart, F. H. Kimball
Beukelman, W. H. Stickney		Hoyne, A. H. Salem	Tobin, F. J. Parkston
Bobb, B. A. Mitchell		Hunt, Wm. Murdo	Treon, F. Chamberlain
Bobb, C. S. Mitchell		Jenkinson, H. E. Wess. Sprgs.	Waldner, J. L. Parkston
		Jones, E. W. Mitchell	Young, E. M. Mitchell

SIoux FALLS DISTRICT MEDICAL SOCIETY—NO. 7

PRESIDENT		Gage, E. E. Sioux Falls	Pankow, L. J. Sioux Falls
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Forsberg, C. Wm. Sioux Falls		Grove, A. F. Dell Rapids	Putnam, E. D. Sioux Falls
Baldwin, G. Sioux Falls		Hannon, L. J. Hartford	Reagan, R. Sioux Falls
Billingsley, P. R. Sioux Falls		Hanson, O. L. Valley Springs	Rider, A. S. Flandreau
Brandon, P. E. Sioux Falls		Hill, L. G. Newton, Iowa	Roberts, W. P. Sioux Falls
Cottam, G. G. Sioux Falls		Hunmer, H. R. Canton	Sackett, R. F. Parker
Craig, D. W. Sioux Falls		Hyden, A. Sioux Falls	Schwartz, Jos. Sioux Falls
Culver, C. T. Sioux Falls		Kellar, S. A. Sioux Falls	Stegeman, S. B. Salem
De Vall, F. C. Garretson		Kellar, W. F. Sioux Falls	Stenberg, E. S. Sioux Falls
Dickinson, W. E. Canistota		Lamb, H. H. Sioux Falls	Stern, M. A. Sioux Falls
Donahoe, S. A. Sioux Falls		Larsen, M. W. Canton	Stevens, G. A. Sioux Falls
Donahoe, W. E. Sioux Falls		Lokke, B. R. Egan	Stevens, R. G. Sioux Falls
Eagan, J. B. Dell Rapids		Meyer, H. C. E. Sioux Falls	Turner, J. F. Canton
Egan, M. H. Sioux Falls		Moe, A. J. Sioux Falls	Van Demark, G. E. Sioux Falls
Ericksen, O. C. Sioux Falls		Mullen, R. W. Sioux Falls	Vaughn, L. B. Hurley
Fisk, R. R. Flandreau		Nessa, N. J. Sioux Falls	Volin, H. P. Lenox
Forsberg, C. W. Sioux Falls		Nilsson, F. C. Sioux Falls	Wendt, C. L. Canton
		Ophelm, O. V. Sioux Falls	Zimmerman, Goldie Sioux Falls

YANKTON DISTRICT MEDICAL SOCIETY—NO. 8

PRESIDENT		Burkland, P. R. Vermillion	Klima, H. Tyndall
Albertson, G. R. Vermillion		Bushnell, Wm. F. Elk Point	Landmann, G. A. Scotland
SECRETARY		Crecelius, H. A. Lakeport, Cal.	Leighton, I. W. Scotland
Hohf, J. A. Yankton		Cruickshank, T. Vermillion	Moore, F. A. Lesterville
Abts, F. J. Yankton		Duguid, J. O. Springfield	Morehouse, E. M. Yankton
Adams, G. S. Yankton		Freshour, I. M. Yankton	Ohlmacher, J. C. Vermillion
Albertson, G. R. Vermillion		Frink, R. P. Wagner	Smith, F. C. Yankton
Beall, L. F. Irene		Hohf, J. A. Yankton	Stansbury, E. M. Vermillion
Benesh, L. C. Vermillion		Hohf, S. M. Yankton	Stephens, G. W. Yankton
Bigler, Lottie G. Yankton		Johnson, G. E. Avon	Swezey, F. A. Wakonda
Blezek, F. M. Tabor		Joyce, E. Hurley	Trierweiler, J. E. Yankton
Bright, H. F. Elk Point		Kalayjian, D. S. Parker	Williams, D. B. Yankton
Brookman, L. J. Vermillion		Kauffman, E. J. Marion	Willhite, F. V. Redfield
		Keeling, C. M. Springfield	Wipf, A. A. Freeman

BLACK HILLS DISTRICT MEDICAL SOCIETY—NO. 9

PRESIDENT		Geyerman, P. F. Deadwood	Morse, W. E. Rapid City
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SECRETARY		Hargens, C. W. Hot Springs	Newby, H. D. Rapid City
Jernstrom, R. E. Rapid City		Heinemann, A. A. Wasta	O'Toole, T. F. New Underwood
Bentley, W. S. Sioux Falls		Jackson, R. J. Rapid City	Owen, N. T. Rapid City
Bilger, F. W. Hot Springs		Jernstrom, R. E. Rapid City	Radusch, Freda Rapid City
Chassell, J. L. Belle Fourche		Lister, F. E. Faith	Ramsey, Guy Philip
Crane, H. L. L'Oryra, Peru, S. A.		Mattox, N. E. Lead	Rogers, J. S. Hot Springs
Doyle, J. I. Rapid City		Merdanian, S. K. Oelrichs	Stewart, J. L. Nemo
Ewald, P. P. Lead		Miller, G. F. Spearfish	Threadgold, J. O. Belle Fourche
Fleeger, R. B. Lead		Minty, F. W. Rapid City	Walsh, J. M. Rapid City
		Mitchell, F. L. Newell	Walters, C. A. Belle Fourche

ROSEBUD DISTRICT MEDICAL SOCIETY— NO. 10

PRESIDENT		Bouza, F. E. White River	Overton, R. V. Winner
Carmack, A. C. Colome		Carmack, A. O. Colome	Quinn, R. J. Burke
SECRETARY		Kenaston, H. R. Bonesteel	Salladay, I. R. White River
Overton, R. V. Winner		Malster, R. M. Carter	Walters, S. S. Winner
		Matousek, W. J. Gregory	Wilson, F. D. Winner

KINGSBURY DISTRICT MEDICAL SOCIETY—NO. 11

PRESIDENT

Scanlan, D. L. Volga

SECRETARY

Hopkins, N. K. Arlington

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Butler, C. A. Lake Preston

Dyar, B. A. De Smet

Gross, D. W. Iroquois

Grove, E. H. Arlington

Guldseth, G. J. Lake Preston

Hopkins, N. K. Arlington

Irvine, G. B. Tempe, Ariz.

Jamieson, G. V. De Smet

Peeke, A. P. Volga

Scanlan, D. L. Volga

Torwick, E. E. Volga

WHETSTONE VALLEY DISTRICT MEDICAL SOCIETY—NO. 12

PRESIDENT

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SECRETARY

Pearson, A. W. Peever

Brown, A. E. Webster

Church, E. O. Big Stone City

De Tuncq, A. E. Milbank

Flett, Chas. Milbank

Hawkins, A. P. Waubay

Jacotel, J. A. Milbank

Peabody, H. C. Webster

Peabody, P. D. Webster

Peterson, C. M. Sisseton

Pfister, F. F. Webster

MINER DISTRICT MEDICAL SOCIETY—NO. 13

PRESIDENT

Feigie, C. A. Canova

SECRETARY

Burman, G. E. Carthage

Barthell, J. F. Howard

Burman, G. E. Carthage

Feigie, C. A. Canova

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 Adams, G. S. Yankton
 Adams, J. F. Aberdeen
 Ahlfs, J. J. Conde
 Albertson, G. R. Vermillion
 Aldrich, H. H. Roscoe
 Allen, J. M. Rosholt
 Alway, J. D. Aberdeen
 Ash, J. C. Garden City
 Auld, C. V. Plankinton
 Baer, T. H. Timberlake
 Baldwin, G. Sioux Falls
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 Bates, W. A. Aberdeen
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 Beall, L. F. Irene
 Benesh, L. C. Vermillion
 Bentley, W. S. Sioux Falls
 Bigler, Lottie G. Yankton
 Billion, T. J. Sioux Falls
 Billingsley, P. R. Sioux Falls
 Bilger, F. W. Hot Springs
 Blezek, F. M. Tabor
 Bloemendaal, G. L. Cresbard
 Bobb, B. A. Mitchell
 Bobb, C. S. Mitchell
 Bostrom, A. E. De Smet
 Bouza, F. E. White River
 Brandon, P. E. Sioux Falls
 Brenckle, J. F. Northville
 Bright, H. F. Elk Point
 Brookman, L. J. Vermilion
 Brown, A. E. Webster
 Brown, H. R. Watertown
 Bruner, J. E. Frederick
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 Buckelman, W. H. Stickney
 Burkland, P. R. Vermilion
 Burman, G. E. Carthage
 Bushnell, W. F. Elk Point
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Calene, J. L. Aberdeen
 Campbell, R. F. Watertown
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 Church, E. O. Big Stone City
 Cochran, F. B. Plankinton
 Cogswell, M. E. Wolsey
 Cook, J. F. D. Langford
 Cooley, F. H. Redfield
 Cottam, G. G. Sioux Falls
 Countrvman, G. E. Aberdeen
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 Crain, C. F. Redfield
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 Crawford, R. A. Chamberlain
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 Crecelius, H. A. Volin
 Cruickshank, T. Vermilion
 Culver, C. T. Sioux Falls
 Davidson, Magni Brookings
 De Tuncq, A. E. Milbank
 De Vall, F. C. Garretson
 Delaney, W. A. Mitchell
 Dick, L. C. Spencer
 Dickinson, W. E. Canistota
 Dinsmore, W. E. Claremont
 Donahoe, S. A. Sioux Falls
 Donahoe, W. E. Sioux Falls
 Doyle, J. I. Rapid City
 Duguid, J. O. Springfield
 Dunn, J. E. Groton
 Dyar, B. A. De Smet
 Eagan, J. B. Dell Rapids
 Egan, M. H. Sioux Falls
 Elward, L. R. Ashton
 Engelson, C. J. Brookings
 Erickson, O. C. Sioux Falls
 Fwald, P. P. Lead
 Faust, J. H. Huron
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 Fisk, R. R. Flandreau
 Fleeger, R. B. Lead

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 Freshour, I. M. Yankton
 Frink, R. P. Wagner
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 Gerdes, O. H. Eureka
 Geyerman, P. F. Hot Springs
 Gifford, A. J. Alexandria
 Gillis, F. D. Mitchell
 Gregg, J. B. Sioux Falls
 Gregory, D. A. Milbank
 Green, B. T. Brookings
 Griffith, W. H. Huron
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 Gross, D. W. Iroquois
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 Grove, E. H. Arlington
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 Guldseth, G. J. Lake Preston
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 Hannon, L. J. Hartford
 Hanson, O. L. Valley Springs
 Hare, Lyle Spearfish
 Hargens, C. W. Hot Springs
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 Hart, R. S. Groton
 Hawkins, A. P. Waubay
 Hayes, Clara E. N. Y. City
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 Herman, H. J. Webster
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 Hill Robert Ipswich
 Hoagland, C. C. Madison
 Hohf, J. A. Yankton
 Hofh, S. M. Yankton
 Hopkins, N. K. Arlington
 Hoyne, A. H. Salem
 Hummer, H. R. Canton
 Hunt, Wm. Murdo
 Hyden, A. Sioux Falls

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 Jacobey, W. K.Mobridge
 Jackson, E. B.Aberdeen
 Jackson, R. J.Rapid City
 Jacotel, J. A.Milbank
 Jamieson, G. V.De Smet
 Jenkinson, H. E.Wess. Sprgs.
 Jernstrom, R. E.Rapid City
 Johnson, A. EinarWatertown
 Johnson, G. E.Avon
 Johnston, M. C.Aberdeen
 Jones, E. W.Mitchell
 Jones, T. D.Bowdle
 Jordan, L. E.Chester
 Joyce, E.Hurley
 Kalayjian, D. S.Parker
 Katz, O. W.Seneca
 Kauffman, E. J.Marion
 Keegan, AgnesAberdeen
 Keeling, C. M.Springfield
 Kellar, S. A.Sioux Falls
 Kellar, W. F.Sioux Falls
 Kellogg, H. E.Brookings
 Kelly, R. A.Mitchell
 Kenaston, H. R.Bonesteel
 Kenney, H. T.Watertown
 Kimble, O. A.Murdo
 King, H. I.Aberdeen
 King, OwenAberdeen
 Klima, H.Tyndall
 Koren, FinnWatertown
 Kraushaar, F. J.Aberdeen
 Kutnewsky, J. K.Redfield
 Lamb, H. H.Sioux Falls
 Landmann, G. A.Scotland
 Larsen, M. W.Canton
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 Launspach, G. W.Huron
 Leighton, I. W.Scotland
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 Lokke, B. R.Egan
 Lowe, C. E.Mobridge
 McCarthy, P. V.Aberdeen
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 McLaurin, A. A.Pierre
 Magee, W. G.Watertown
 Malloy, J. F.Mitchell
 Malster, R. M.Carter
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 Martin, P. T.Arlington, Minn.
 Matlock, W. L.Huron
 Matousek, W. J.Gregory
 Mattox, N. E.Lead
 Mayer, R. G.Aberdeen
 Merdianian, S. K.Oefrichs
 Meyer, H. C. E.Sioux Falls
 Miller, FrankAberdeen
 Miller, H. A.Brookings

Miller, G. F.Spearfish
 Minty, F. W.Rapid City
 Mitchell, F. L.Newell
 Moe, A. J.Sioux Falls
 Moore, F. A.Yankton
 Morehouse, E. M.Yankton
 Morrissey, R. J.Ft. Pierre
 Morse, W. E.Rapid City
 Morsman, C. F.Hot Springs
 Mullen, R. W.Sioux Falls
 Murdy, B. C.Aberdeen
 Murdy, Robert C.Aberdeen
 Murphy, T. W.Pierpont
 Nelson, E. N.Watertown
 Nessa, N. J.Sioux Falls
 Newby, H. D.Rapid City
 Nilsson, F. C.Sioux Falls
 Northrup, F. A.Pierre
 Ohlamacher, J. C.Vermillion
 O'Toole, T. F.New Underwood
 Olson, C. O.Groton
 Opheim, O. V.Sioux Falls
 Overton, R. V.Winner
 Owen, N. T.Rapid City
 Paddleford, J. F.Miller
 Pankow, L. J.Sioux Falls
 Parke, L. L.Canton
 Paulson, A. J.Watertown
 Payne, R. H.Tripp
 Peabody, H. C.Webster
 Peabody, P. D.Webster
 Pearson, A. W.Peever
 Peeke, A. P.Volga
 Perkins, E. L.Sioux Falls
 Peterson, C. M.Sisseton
 Pfister, F. F.Webster
 Pittenger, E. A.Aberdeen
 Potter, G. W.Redfield
 Putnam, E. D.Sioux Falls
 Quinn, R. J.Burke
 Radsch, Freda J.Rapid City
 Ramsey, E. T.Clark
 Ramsey, GuyPhilip
 Ranney, T. P.Aberdeen
 Reagan, R.Sioux Falls
 Rice, D. B.Britton
 Richards, G. H.Watertown
 Rider, A. S.Flandreau
 Riggs, T. F.Pierre
 Robbins, C. E.Pierre
 Roberts, W. P.Sioux Falls
 Rogers, J. S.Hot Springs
 Rowe, A. N.Esteline
 Salladay, I. R.White River
 Sackett, R. F.Parker
 Sarchet, G. A.Mobridge
 Saxton, W. H.Huron
 Saylor, H. L.Huron
 Scallin, P. R.Clark
 Scanlon, D. L.Volga
 Schwartz, Jos.Sioux Falls

Sewell, H. D.Huron
 Sherwood, C. E.Madison
 Sherwood, H. W.Doland
 Shirley, J. C.Huron
 Sigler, G. V.Highmore
 Smith, F. C.Yankton
 Sprague, B. H.Huron
 Stanley, F. H.Vienna
 Stansbury, E. M.Vermilion
 Stegeman, S. B.Salem
 Stenberg, E. S.Sioux Falls
 Stephens, E. E.Eureka
 Stephens, G. W.Yankton
 Stern, M. A.Sioux Falls
 Stewart, F. H.Kimball
 Stewart, J. L.Nemo
 Stevens, G. A.Sioux Falls
 Stevens, R. G.Sioux Falls
 Stout, T. E.Pierre
 Swezey, F. A.Wakonda
 Tarbell, H. A.Watertown
 Taylor, E. B.Huron
 Thomas, Benj.Huron
 Threadgold, J. O.Belle Fourche
 Tillisch, H.Brookings
 Tobin, F. J.Parkston
 Totten, F. C.Lemmon
 Torwick, E. E.Volga
 Treon, F.Chamberlain
 Trierweiler, J. E.Yankton
 Tschetter, J. S.Huron
 Turner, J. F.Canton
 Twining, G. H.Mobridge
 Van Demark, G. E.Sioux Falls
 Vaughn, J. B.Castlewood
 Vaughn, L. B.Hurley
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 Waldner, J. L.Parkston
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 Walters, C. A.Belle Fourche
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 Wendt, C. L.Canton
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 Williams, C. A.Doland
 Williams, D. B.Yankton
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 Wilson, R. D.Aberdeen
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The Hennepin County Medical Society
The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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MINNEAPOLIS, JULY 1, 1930

THE MINNESOTA STATE MEDICAL ASSOCIATION MEETING

The meeting of the State Association at Duluth on July 14, 15, and 16 will be a rather awkward date for some of the members, but it is to be hoped that they will clear the way so they can get to the meeting. Particularly because there will be two noted men from abroad to address the meeting, namely: Primarius Lorenz Boehler, of the Vienna Accident Hospital, and Franz B. Volhard, Professor of Internal Medicine and Director of the City Hospital, Frankfort-on-the-Main, Germany.

Dr. Boehler is introduced as a man who will explain his sensational new method of treating fresh fractures. He uses plaster casts without padding which enable the patient to be on his feet in three days, whereas the old method confined the patient to bed for three weeks. This will be well worth hearing. He evidently has revolutionized the treatment of fractures. Just when this subject will be covered by Dr. Boehler we are not prepared to say at present.

Dr. Volhard will talk some time during the session. Both of these men are recognized as men of great importance, and to hear them will be a treat.

During Monday, the 14th, Dr. Boehler will take part in the symposium on Traumatic Surgery.

Immunology will be discussed on Monday afternoon; it is one of the most vital and ab-

sorbing pre-occupations of the medical profession today. Longcope and Volhard precede the leaders programmed for this symposium.

Monday evening the changing times will give rise to the discussion, and we will hear the opinions of the most astute medical economists of the country on how the medical profession is affected. This should be a widely anticipated meeting.

The meetings held for the past few years have attracted wide attention and the coming meeting promises to be of the best. We promise that you will get everything expected and more.

Tuesday morning, July 15th, we will hear Early Diagnosis and Treatment of Malignancy discussed, which ought to be particularly interesting. Tuesday afternoon we will hear a discussion on Rheumatic Fever, our old friend, the friend of our boyhood that has been the subject of medical discussion ever since the world began.

Professor Ralph Kinsella, of St. Louis University, will be one of the leaders of the discussion on Tuesday afternoon.

Wednesday morning, Anesthesia will occupy our attention, and should be of interest to the surgeon and others. Wednesday afternoon, something very practical in a symposium covering subjects from the treatment of foot disorders to encephalitis.

Then there are exhibits, scientific, public health and commercial. There are movies, among them the sensational Canti cancer film will be repeated by request. Then there will be the banquet, reunions and a sight-seeing trip around the greatest lake of all Minnesota's 10,000.

Make your hotel reservations early. We have found during the meeting of the A. M. A. and other meetings that frequently men are disappointed at not getting the reservations they expected; this is due to lateness on the part of the men in making their requests known. Summer rates to Duluth are in effect now; round trip from the Twin Cities is \$8.00, so get the money with which to go, put it in your pant's pocket and be ready to pay it out because this is going to be a good meeting. The editors of both medical journals published in Minnesota will be there, and there will need to be others on the watch to see that they don't get into trouble.

THE ADVERTISING SCORE

The Pierce County Medical Society has come out in the Tacoma daily newspapers, the *Ledger*, the *News-Tribune* and the *Times*, opening a campaign of advertising strictly within ethical bounds of advertising. Minnesota has an ad-

vertising law which we are trying to live up to but it allows a certain limit which is more than one would ordinarily expect, but none of the men have ever tried to evade it.

The Pierce County Medical Society stresses particularly the fact that the advertisements are informative in character, designed largely along the lines of prevention, and are sponsored by the society as a whole and not by individual physicians. The stand of the Pierce County Medical Society toward advertising is that the individual must not advertise but the society may, provided its advertisements are clean. They have gone over the advertising problem for some time and the members are convinced that other types of practitioners are making unusual gains in the public esteem and that the public service which the medical profession might render is less effective than it should be because of a lack of understanding on the part of the public. Some type of advertising was seriously needed in their opinion but much difficulty was encountered in the prejudice existing against collective advertising as well as that of the individual. A committee studied the matter and steps were taken to raise the necessary funds.

As an accompanying feature of the advertising, a question-and-answer service along general health and medical lines will be maintained by the society, the public being invited to write in to headquarters of the society on matters of interest to them. Answers will be given out by personal letters being dictated by the committee members and going out under the name of the society, it is understood.

Taken all in all this is not a new scheme. Probably it originated in Minnesota in our State Medical Society a year ago in perhaps a little different way. A board was appointed at that time by the society who called themselves a Consulting Board. They did very little advertising but they expected the doctors through the country to report to them cases concerning which they might be in doubt and send in to the Board inquiries about these cases, the Board would in turn refer them to the proper authorities from whom the doctor making the inquiry would receive a reply. In this way the men in the country have the benefit of the experience of the men in the city. The average doctor is afraid to advertise; he is afraid that when his name comes out in the paper that he may be criticised. Publicity sometimes comes through the newspapers following an operation on a person of prominence; the surgeon's name is frequently published. There is nothing in this connection

that is objectionable as far as we can see. There are times, of course, when advertising of this kind works adversely.

Minnesota activities along this line have been carried out for a year now and have proven a success.

The editor is in receipt of a letter from Dr. N. D. Davis, III, Secretary of the Chicago Medical Society, announcing that their Society have prepared for their summer clinics to be held at the Cook County Hospital, Harrison and Wood Sts., Chicago, by the members of Cook County Hospital Staff, on August 11-22, 1930.

One who is at all familiar with the methods of Chicago clinics may depend upon a large organization being present and a thoroughly good set of clinics. The registration fee is only \$10, which covers the expense of organizing the clinics.

Also they have a set of pediatrics clinics to be held in the children's hospital, and demonstrations in pathology and laboratory technique will be held at the morgue. In the past they have had visitors from many states at their annual clinics and doubtless this will be of the same type—full of interest and almost a review of medicine.

SUMMER CLINICS OF THE CHICAGO MEDICAL SOCIETY

The Officers of the Chicago Medical Society together with members of the staff of Cook County Hospital, realizing the demand for postgraduate clinical work for the general practitioner have made preparations to meet the requirements.

In the spring of 1926 the Society extended an invitation to every licensed physician in Illinois to make use of the opportunity afforded for postgraduate work at Cook County Hospital under the instruction of members of its staff.

The loyal support by the profession greatly encouraged the Society and the staff of the Cook County Hospital to continue making available to the general practitioner the vast material of the hospital.

Following the first course our registrations have included physicians from Alabama, California, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin and Canada.

The attendance at the Summer Clinics in 1929 surpasses that of previous years. About 50 per cent of the physicians who have attended one of our courses have attended subsequent sessions.

The number who may attend the clinics is limited by the size of the amphitheatre, therefore registration in advance is necessary. Admission to the

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THE FIRST AID TREATMENT OF BURNS WITH TANNIC ACID*

BY FREDERICK CHRISTOPHER, M.D., F.A.C.S.

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EVANSTON, ILLINOIS

The speaker is deeply appreciative of the honor of being permitted to give a paper before the Great Northern Railway Surgeons Association and hopes that he may have some little success in pleading the cause of the tannic acid treatment for burns. The writer's enthusiasm compels him to regard Davidson's discovery of this method of treating burns as one of the outstanding therapeutic contributions of the century.

The frequent occurrence, the mortality, the morbidity and the many varieties of treatment still advocate in cases of burns serve to make this subject always of interest. Your Chief Surgeon, Dr. R. C. Webb¹, from a study of Interstate Commerce Commission statistics², estimates the total annual number of burns among individuals in railroad accidents to be between 2,000 and 3,000. In the year 1928, among 22,800 accidents to persons which were classified as "reportable" because they lasted over three days, there were 725 burns. Of these, ninety-nine occurred in train accidents and 626 in train service accidents. In addition to this, there were 43,900 nontrain accidents, which, however, were not classified as to burns. It is not too much to

suppose that at least five or six per cent of these were burns, making a total of 3,000 cases. The large number of cases occurring in other industrial pursuits and in domestic activities will easily swell the annual number to 10,000 or 20,000. An injury which occurs this frequently deserves careful study in order that the procedures which constitute the best treatment may be determined, and that these procedures may be standardized and made as widely available as possible.

The administration of proper first aid treatment in burns is extremely important. If the first aid period be taken to include the first forty-eight hours, it may safely be said that the success or failure of the treatments rests upon what is done in this period.

Burns may occur from the effects of hot air, hot liquids, or steam, from exposure to sunlight and to ultraviolet light, and from acids, alkalis, electricity, Roentgen rays, radium, caustic substances of various kinds and irritant gases (Schamberg).³

In this country and Germany it is customary to classify burns into three grades according to the depth: First degree, erythema; second degree, vesicle formation; and third degree, partial or complete involvement of the skin or un-

*Read before the Great Northern Railway Surgeons Association, Grand Forks, North Dakota, June 19, 1930.

derlying structures. In England and France it is usual to divide burns into the six degrees of Dupuytren's classification, viz: First degree, superficial congestion; second degree, bleb formation; third degree, destruction of cuticle with exposure of the nerve terminals, the most painful form of burn; fourth degree, the whole thickness of the skin is destroyed; fifth degree, the muscles are encroached upon; and sixth degree, the entire limb is involved.

According to Pack⁴ and MacLeod⁵ the extent of a burn is more important than the depth. All burns of first degree are fatal if two thirds of the body surface is involved⁶ and all burns of second degree are fatal in adults if one third of the body surface is involved, and in children if one seventh is involved.⁷ All burns covering one third of the body surface are extremely serious, if not imminently fatal. All burns involving one tenth of the body surface should be considered serious (Pack).⁴ Berkow's⁸ work is useful in the estimation of the extent of surface lesions. He concludes that the lower extremities, including the buttocks, comprise thirty-eight per cent of the body surface; the trunk, including the neck, thirty-eight per cent; the upper extremities eighteen per cent; and the head six per cent. The hand is one quarter of an upper extremity and the arm three quarters. Of the lower extremity, the foot is one sixth, the leg one third, and the thigh one half.

More recent studies have added to our knowledge of the physiology of burns. In extensive burn cases the adrenal glands weigh from three to five times the normal and epinephrin content is absent or low (Weiskotten).⁹ Olbrycht¹⁰ states that the only anatomic changes in severe burns in man and animals are in the adrenals, and that the intensity of the hyperemia and ecchymosis, and the reduction or total loss of chromaffin substance and lipoid in these glands, seemed to depend upon the extent of the burned area and the age of the subject, being most pronounced in the young. He says that the adrenals displayed the same type of changes as in anaphylactic shock and peptone intoxication, and he ascribes these changes to a toxic action from the decomposition of protein in the burned tissues. In April, 1929, Harris¹¹ describes a fatal burn case in which death was due to hemorrhage into the suprarenal capsule and to hemorrhage from a duodenal ulcer. Brancati¹² believes death to be due to an anaphylactic shock from the proteins changed by the heat. Robertson and Boyd believe the toxin to consist of primary and sec-

ondary proteoses. The interesting work of Greenwald and Eliasberg shows that in rabbits the cause of death may be divided into two stages: (a) initial stage which is due to shock and which is accompanied by high blood sugar content due to a hyperactivity of the adrenals, and (b) the secondary stage which is due to degenerative changes, particularly in the adrenals. From this it would appear that the administration of adrenalin is to be restricted to the second stage and is contraindicated in the primary stage. Theoretically, the use of insulin might seem to be indicated in the primary stage.

Underhill, Garrington, Kapsinow, and Pack¹³ studied the concentration of the blood in burned cases by means of hemoglobin estimations. They found that in extensive superficial burns the blood becomes highly concentrated, and they believe that the degree of blood concentration is an index of the patient's general condition. Davidson and Mathew¹⁴ explain this concentration of the blood in burn cases by assuming an early increased permeability of the capillaries. The burned skin, moreover, loses fluids in blisters or dripping.¹⁵ Pack,⁴ basing his belief on his work with Underhill,¹³ feels that a forty per cent increase in hemoglobin, if maintained over a period, is incompatible with life. The extreme concentration of the blood requires the copious administration of fluids by all avenues.

In a later paper, Underhill¹⁵ stresses the seriousness of the concentration of the blood in burn cases. This author places the danger level of the hemoglobin at 125 per cent and has known it to be as high as 163 per cent.

Davidson^{16, 17} showed a lowering of the whole blood and plasma chlorides which is proportionate to the amount of tissue devitalized and which is present as long as sloughs are present. On this account Davidson suggested sodium chloride administration. Speese and Bothe,¹⁸ in emphasizing the importance of blood chemistry in burn cases, note that reduction in blood chlorides and the elevation of the plasma bicarbonate present a picture not unlike the toxemia of intestinal obstruction. They advise the administration of five per cent glucose in normal salt solution.

According to Novak,¹⁹ ulceration of the gastrointestinal tract is an uncommon complication of extensive cutaneous burns, occurring probably in about five per cent of the fatal cases. Ronchese,²⁰ in reporting a fatal hemorrhage from a duodenal ulcer fourteen days after a third degree burn, says he has seen ulcer but once in 348 burned persons.

With this introduction, various steps in the treatment may be taken up.

Pain. The pain of a severe burn is agonizing and the patient should receive an injection of morphine as soon as possible. Morphine may be obtained in small collapsible tubes equipped with a sterile needle for immediate injection. These tubes should be in every doctor's kit. Large doses of morphine may be required to control the pain, but it is best to start with the individual's average dose and increase as needed.

Primary Shock. The primary shock in extensive burn is similar to any surgical shock. There is blunted sensibility, cold moist skin, sub-normal rectal temperature, irregular, sighing respirations, rapid "thready" pulse and very low blood pressure. External heat is applied and fluids are pushed using hypodermoclysis or proctoclysis if necessary. Great care is to be exercised in the removal of the clothing. It is very shocking, and often may be better deferred until there is some recovery from shock. Placing the patient in a warm bath often facilitates the removal. Anesthesia may be necessary if the shock is not so severe as to be a contraindication.

Toxic Shock. In twenty-four to forty-eight hours, or as late as the fourteenth day,²¹ signs of the toxic protein absorption become evident. The temperature is elevated, the pulse is rapid, the patient may be drowsy or delirious, there is vomiting, and death may quickly ensue. Long before this stage, measures should have been instituted in the wound itself which tend to make the toxin innocuous or remove it altogether. Should, however, there be evidences of toxemia, this is to be energetically combatted.

Systemic Treatment of Toxemia. (a) Four thousand to five thousand cubic centimeters of fluids, preferably normal saline or five per cent glucose in normal saline, are given by hypodermoclysis, proctoclysis and by infusion. According to Beekman²⁹: "A good working rule is that in twenty-four hours a patient should take at least one liter of fluid for every twenty-five pounds (11.3 kilograms) of body weight." Sodium bicarbonate and water are given by mouth. This alleviates the blood concentration and the low chloride content. Should fluid accumulate later in the tissues, magnesium sulphate will assist in its removal.

(b) Epinephrin may be indicated to remedy adrenal deficiency.

(c) Blood transfusions. Riehl²² first advocated blood transfusions in 1925, and in 1927 he reported the use of blood transfusions combined

with the "customary" other methods in thirty-two severely burned cases; ten cases, which most probably would have been fatal, recovered. In eleven cases the blood transfusions prolonged life, and in two cases they were of no value. Davidson²³ transfuses on admission any patient with a possible lethal burn. This is done before the onset of shock. If shock develops the transfusion is repeated in less than twenty-four hours. In 1923, Robertson and Boyd^{24, 25} proposed the rather heroic exsanguination-transfusion in which the patient is thoroughly bled before the transfusion.

Local Treatment of Toxemia. In 1925, Davidson²⁶ made his epoch-making contribution to the therapy of burns. This worker, in searching for a chemical which would fix the toxic substances in the burned tissue, hit upon tannic acid.

The tannic acid coagulates the burned tissue and fixes in it the toxic substance in such a manner that absorption is largely prevented.

Davidson's original method was, at the earliest possible moment, to cover the burned area with a gauze saturated in a two and a half per cent freshly prepared aqueous solution of tannic acid. The gauze was kept moist with this solution for twenty-four hours or more until the burned skin was thoroughly tanned.

In 1926, Beck and Powers²⁷ introduced the method of applying the tannic acid by means of a spray. These authors advise that the burn be covered with a fine spray every half hour, until the surface becomes brown or black. No compresses are used and the burn is continuously exposed to dry heat. These authors state that an extensive burn can be completely coagulated in sixteen hours. Davidson²⁸ writes that he has entirely given up the use of compresses and has adopted the spray as suggested by Beck. Moreover, Davidson now uses a five per cent solution in ordinary burns, and in extensive burns a ten per cent spray. He advises spraying every fifteen minutes and obtains a satisfactory coagulation in two to three hours. A foot pump paint spray has been used by Metz with great satisfaction.

Formerly, it was advised to employ the tannic acid in the form of a five per cent ointment when the burns occurred about the face. Beekman²⁹ has found, however, that the five per cent aqueous solution may be used on the face without injurious results to the eyes.

The tannic acid method will not work in the presence of ointments. Where the tannic acid

method is to be employed, ointments should not be available or their use restricted to small ambulatory burns. When cases of extensive burns arrive at the hospital covered with an ointment, this should be removed with the help of a generous dose of morphine or even with a general anesthetic. All blebs and loose epidermis are carefully trimmed away, with meticulous care to aseptic precautions, before the spray is begun (Davidson). If this be done carefully infection is unlikely to occur. After removing the overlying epithelium of the blebs, Herzfeld³¹ dries the surface with ether before spraying.

All clothing and dressing of any kind are removed from the patient who is placed in bed, on sterile sheets, under a cradle tent. An electric light bulb of proper size is placed inside the tent to insure proper warmth and dryness. The spraying is continued until the burned area is brown and dry. It is then merely exposed to the warm air of the tent. This coagulum is undisturbed for twelve or more days. If infection supervenes, it is treated by tepid saline irrigations and drainage from beneath the crusts. Wet boric dressings should not be used. "It has been found, however, that if wet dressings of boric acid are used, a rapid toxemia arises that is frequently fatal" (Montgomery).³²

The coagulated crusts should not be disturbed until they separate. Beck and Powers²⁷ recommend softening the crust with vaseline to facilitate its detachment when the proper time comes.

The tannic acid treatment is suitable for all sizes and types of burns. In small burns of the hand or face, the writer will concede the usefulness and availability of a dressing of five per cent tannic acid ointment, mercurochrome ointment, or one of the proprietary ointments (unguentine or butesin picrate). In very cold weather careless persons may permit a wet dressing to become frozen.

All first aid cabinets should contain bottles of tannic acid powder. These bottles should be plainly labeled with instructions as to the proper amount of clean water to be mixed with the tannic acid to make a five per cent solution. When it is impossible to hospitalize the patient immediately, it will be necessary to envelope the burn with dry sterile gauze and moisten the latter with five per cent tannic acid solution. More desirable, however, is the immediate hospitalization and employment of a spray as described above.

Small burns treated immediately and properly by the tannic acid method will have a far smaller

time of disability. The pain is less, the likelihood of infection much less, and the coagulum permits earlier resumption of work with a small protective dressing.

The availability of the tannic acid method is evidenced by Shen's paper in the *Clinical Medical Journal*.

Shen found an infusion of tea to be nearly as effective as the tannic acid solution and gives the following directions for its preparation. One gram of tea leaves in 100 c.c. of boiling water is considered as a one per cent infusion. The infusion, to be effective for protein precipitation, must be eight per cent. A fifteen minute eight per cent infusion is prepared and sterilized by boiling. This tea is dark red in color and bitter to taste.

The administration of tetanus antitoxin may be considered after first ascertaining the patient's nonsusceptibility to horse serum. Goldblatt reported three cases of tetanus among eighty-three cases of burns. Davidson, however, believes that many recorded cases of tetanus have been convulsions due to edema of the brain or thrombosis.

The tannic acid treatment of burns has received the hearty endorsement of many writers. Bancroft and Rogers³³ prefer the tannic acid treatment because, in their opinion, first, it diminishes pain; second, it prevents fluid depletion; third, it decreases toxemia; and fourth, in first and second degree burns it allows epithelization to proceed while the membrane is in place. In cases of infection these writers débride the eschar and treat the infection with 1:5,000 acriflavin. Beekman³⁴ finds that in a series of 434 cases of burns in children, the tannic acid treatment has reduced the mortality from twenty-eight per cent to fifteen per cent, and that the death rate from toxemia was lowered by two thirds. The greatest mortality from toxemia occurs in the period of time between the end of the first twenty-four hours and the end of the third day (Beekman). Beekman³⁴ finds that the average hospital stay of patients was increased six days by the tannic acid treatment but thinks that this is probably the result of the fact that patients with severe cases of burns lived, who, otherwise, would have died. In Montgomery's³² twenty-four cases but two died and both of these had pneumonia. Wilson,³⁵ of Edinburgh, treated forty-two children and eight adults with the tannic acid method with a mortality of but eight per cent.

SUMMARY

In cases of extensive burns the following procedures are indicated:

1. Treat pain with morphine.
2. Treat primary shock with morphine, external heat, and fluids.
3. Remove clothing carefully, using anesthesia if necessary.
4. Do not apply any ointments to the burned surface. If they be present, remove them, using anesthesia, if necessary.
5. Remove all clothing and place patient in a heated tent.
6. *Spray all burned surfaces every fifteen minutes with a five per cent solution of freshly prepared aqueous solution of tannic acid.*
7. Under sterile precautions, trim away the overlying epithelium of all blebs and blisters and spray the underlying area with tannic acid solution.
8. Administer at least 1,000 c.c. of fluid for each twenty-five pounds of weight in twenty-four hours for the first one to three days. Any fluids may be given by mouth. Normal salt solution is given by rectum and by hypodermoclysis. Five per cent dextrose in normal salt solution is given by infusion.

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PRIMARY CARCINOMA OF THE LIVER

BY C. B. WRIGHT, M.D.

MINNEAPOLIS, MINNESOTA

Primary cancer of the liver is rare. Eggele who collected 163 cases estimated its frequency as about one case in 2,000 autopsies. Hale White found 24 cases in 18,500 autopsies. Counsellor and McIndo reported 5 cases from the Mayo Clinic in 5,976 autopsies, and gave a complete review of the literature and a description of the pathology. In this same series there were 220 cases of secondary cancer of the liver and 127 cases of portal cirrhosis. In their review of 19 cases they only found 4 were in females. Pathologists recognize 2 types of can-

cer. One which begins in the bile ducts and the other from the liver cells. There is usually evidences of cirrhosis of the liver and the cancers occur in the nodules which are undergoing rapid regeneration. It is insinuated in the literature that some of the specimens reported as cancer were nothing but areas of rapid regeneration in a cirrhotic liver. Cases have also been described in which there were two primary growths in the same liver.

Clinical histories are of two kinds. In the first group there is a history up to 4 years, then

a rapid termination in a period of four months. In these cases the long history is most likely a history of cirrhosis. Secondly, there is the rapidly progressive type lasting 3 weeks to 4 months. Pain in the right side and also in the back is described; weakness, digestive disturbances such as nausea and vomiting, and slight jaundice. Sometimes there is low fever. The large nodular liver seems to be the first thing to indicate the diagnosis.

CASE REPORT

I knew this patient for 20 years but saw him first professionally in 1925 when he was 63 years old. At that time he was having attacks of paroxysmal fibrillation with marked prostration lasting several hours. These attacks were precipitated apparently by fatigue, also by worry and indigestion. His general examination at that time was negative. Blood pressure 110/68. Pulse 72 and regular between attacks. Although nothing organically wrong was found he worried about his heart the rest of his life.

In the spring of 1928 he developed bronchopneumonia following grippe, from which he recovered in 2 weeks. He went to Texas shortly after this and while there developed an irregular temperature with chills and sweats. After returning home he began to expectorate large quantities of pus and mucus and a shadow was found behind the heart which was diagnosed, by the roentgenologist, as a media stinal abscess. He apparently recovered completely in a few weeks and was well all that summer and the following winter with the exception of occasional attacks of cardiac irregularity.

In the spring of 1929, while in Arizona, he had an attack of extreme epigastric pain which lasted three or four days, and which caused considerable alarm not only to himself but to the attending physician. No diagnosis was offered by the physician at that time. The patient returned to Minneapolis and was very well all summer working hard at the office, and as far as I know did not see a physician until September. I saw him then. He complained of some neuritis in the side of his neck, and a head cold.

I saw him again on October 26, 1929. Two days before this he began having some discomfort in the upper abdomen during the day, particularly when his stomach was empty. He had a slight cold and some discharge from the nose and some cough at night. Weight 180. I saw him again November 26, 1929, one month later.

At this time he was still complaining of discomfort in his abdomen which was mostly on the left side high up, also a feeling of something dropping down in the back of his throat and entire distaste for food. General examination was negative. Urine examination entirely negative. Heart negative. Lungs showed impaired resonance and superficial râles over the left lower back which did not clear on coughing. I considered these signs due to an old pleuritis. Temperature was normal. Edge of liver just felt on deep inspiration. Hbg. 85 per

cent, red blood cells 4,500,000, white blood cells 8,700. At this time he refused a test meal. Fluoroscopy showed normal esophagus and a small filling defect at the lower end of the stomach near the pylorus. He continued to complain but would not take any further examinations and refused to have a complete X-ray study. On December 9, he developed a low temperature. At this time the white cells went to 9,100, pmn's 72, lymphs 17, monocytes 8, eosinophiles 3, 22 per cent malignant pmn's.

He went to the hospital on December 12, 1929. He was then running an irregular temperature from 99° to 101°, with chilly feelings and sweats. Respirations ran about 24, pulse varied from 80 to 100. At this time examination showed the throat normal, no glandular enlargement, heart sounds were clear. On the left side there was an area of dullness over the back from the angle of the scapula to the base where there was decreased fremitus and definite râles in one spot suggesting a slightly modified bronchial breathing. There were also superficial râles on deep breathing in the left lower axilla. He also had a few bronchovesiculo râles on deep inspiration over the right base. There was slight tenderness on deep pressure over the upper abdomen. Liver not felt at that time and the spleen was not felt. No masses, rigidity or fluid in abdomen. No edema. No joint tenderness. Reflexes normal. Stereoscopic plates of the chest were made. The conclusion of the roentgenologist was "a media stinal pleurisy on the left side and also a shadow which suggests that there might be a small amount of fluid walled off behind the heart. No evidence of pneumonia, new growth or abscess." Blood count at this time was hbg. 75 per cent, rbs. 4,060,000, wbc. 16,800, pmn's 78 per cent and on another occasion 83 per cent. Blood culture reported negative after 8 days growth. Icterus index 10. The patient at times was tender on deep pressure over the left back and right costal margin. There was a slight suggestion of yellowish tinge to the skin. Urobilin negative. Urobilinogen 2 plus. Bilirubin 3 plus.

The patient then insisted on going home where he remained to the time of his death. His condition ran about the same until January 3, when he had an attack of severe abdominal pain and difficulty in breathing with a marked rise in temperature. His pain was in the upper abdomen and lower chest. On examination there was a rounded mass, which seemed to be connected with the liver. This area was very tender. The rectus was rigid and he had a great deal of pain on deep breathing which was relieved to some extent by strapping his chest.

From this time on his condition became much worse. The liver continued to enlarge and gradually became hard and nodular. The pain and tenderness, however, practically disappeared. He became somewhat more yellow but the jaundice was never more than slight. About 10 days before his death a second blood culture was reported positive for Streptococcus Hemolyticus in 3 out of 5 tubes. The leucocyte count at this time was 14,450. The spleen was never palpable at any time. There were no petechia, no joint tenderness. The urine showed a trace of albumen, a few hyaline and granular casts

and a few red blood cells. The patient gradually grew weaker and died on January 30, 1930.

Autopsy by E. T. Bell, University of Minnesota.

The body is well developed, poorly nourished, 177 cm. long and weighing about 135 lbs. The body is embalmed. Hypostatic areas are faint purple color and situated posteriorly; no edema or jaundice.

The peritoneal cavity contains no excess of fluid and no adhesions. The diaphragm is at the third interspace on the right, the fourth rib on the left.

The pleural cavities contain no excess of fluid; there are old adhesions on the left side. The pericardial sac contains no excess fluid, no adhesions.

The heart weighs 300 grams. The epicardium is smooth and clear. There are no lesions of any of the valves or of the mural endocardium. No dilation or hypertrophy of any of the chambers of the heart. No disease of the coronary arteries. No changes in the myocardium. The root of the aorta shows only a few small yellowish patches.

The lungs crepitate throughout; there are no palpable nodules. There is no excess of fluid or pus on the cut surface. No evidence of old mediastinitis. Old pleuritis left base.

The spleen weighs about 200 grams. The capsule is smooth. The cut surface shows no special changes.

The liver is enormously enlarged and filled with tumor masses. Its weight is about 2,500 grams. The largest tumor is in the right lobe and measures about 15 cm. in diameter. Masses of various sizes are scattered throughout the entire liver. On section the tumor masses are of whitish or yellowish white color. Some are sharply circumscribed and

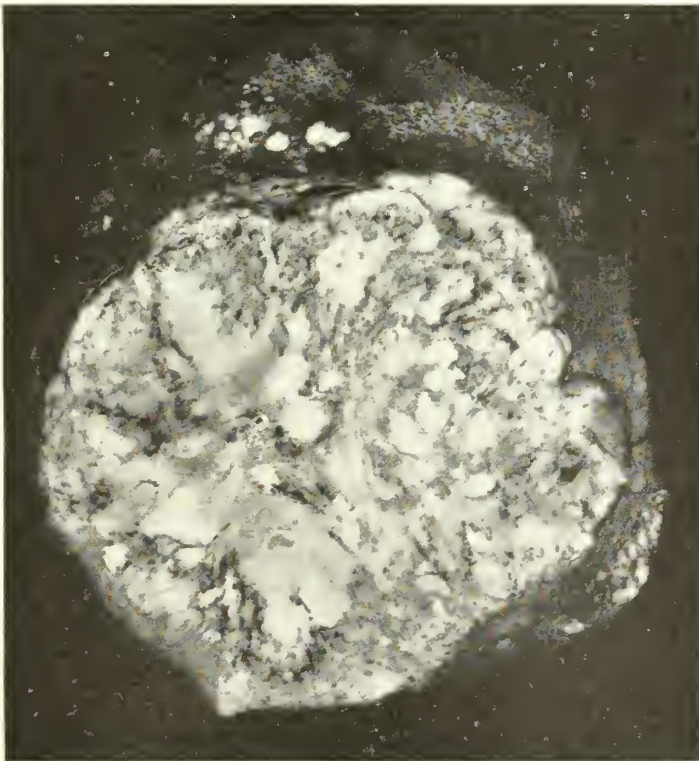
others blend gradually with the surrounding tissue. The liver parenchyma between the nodules is markedly compressed. The liver is not bile-stained. There is no disease of the gallbladder or of the larger bile ducts in the liver. No disease of the common bile duct.

A small elevated nodule is found in the pyloric canal, about 1.5 cm. from the pyloric ring. This is a fleshy, fairly firm growth involving the mucosa; it is about 1 cm. in height, 1.5 cm. in the long axis, and 1 cm. in the short axis of the stomach. This is at first thought to be a primary carcinoma but microscopically is seen to be a benign glandular polyp. The mucosa of all parts of the intestinal tract is examined and no other tumors are found. No tumors of the esophagus, trachea, or bronchi.

The pancreas shows distinct lobules; no areas of fibrosis or softening; no tumors. The adrenals show no gross disease.

The capsules of the kidney strip easily; the external surfaces are smooth. The cut surfaces show no abnormal appearances. No changes in the pelves or ureters. No changes in the mucosa of the bladder. The bladder is moderately distended with urine. The prostate shows moderate enlargement and on section the enlargement appears to be due to multiple adenomas. Microscopic examination of the prostate shows benign hypertrophy. The testes are not enlarged and show no palpable masses.

The aorta shows some small ulcers in the abdominal portion (arteriosclerosis, grade 2). No large lymph nodes in the thorax or abdomen; no large lymph nodes about the liver.



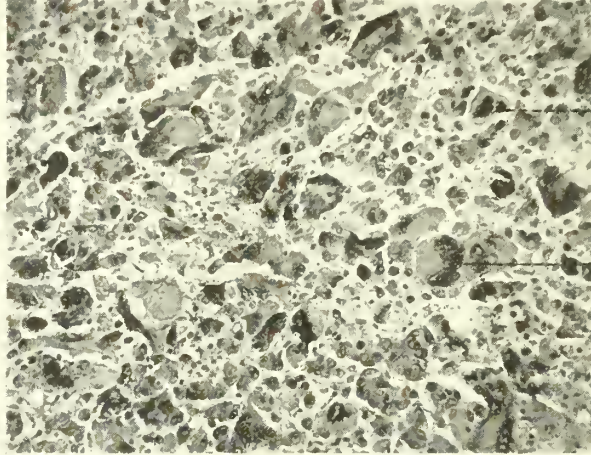
Gross specimen

The organs of the head and neck were not removed.

Microscopic examination of several nodules in the liver shows a tumor composed of rounded and polygonal cells and a great many giant cells. This is one type of primary carcinoma of the liver, called by Ewing, "primary hepatoma." No metastases are found outside the liver.

Diagnosis: Primary carcinoma of the liver.

Attention was finally called definitely to the liver by sudden enlargement which was tender, localized and accompanied by a severe elevation of temperature. The liver rapidly became hard and nodular. Ten days before death streptococcus hemolyticus was found in the blood although previous blood cultures were



Mitotic
figure

Giant
cell

SUMMARY

A case of primary cancer of the liver is described in a patient who had been observed several months before the liver was enlarged. The predominating clinical symptoms and signs up to a month before death were pulmonary. At postmortem the only explanation of the lung symptoms was the presence of an old pleuritis and the fact that the growth in the left lobe of the liver, was densely adherent to the diaphragm. Accompanying these symptoms were continuous temperature, sweats, chilly feelings and leucocytosis. At this time blood cultures were nega-

negative. No explanation for the positive blood culture was found at postmortem.

The cancer was definitely from the liver cells. There was no cirrhosis of the liver. There was a definite sub-mucous polyp in the stomach. The long history of attacks of paroxysmal fibrillation in a heart which was found entirely normal at autopsy was of interest.

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THE RELATION OF TUBERCULOSIS TO INDUSTRY*

BY RUDOLPH C. LOGEFEL, M.S., M.D

MINNEAPOLIS, MINNESOTA

A great deal has been written about this subject, especially the relation of industry as a causative factor in the development of tuberculosis in workers. Various views have been ex-

pressed. The earlier writers have always laid the cause of the greater occurrence of tuberculosis in men at the door of industry. Although many still maintain this view, recent studies have shown that occupation may not be as great a factor as has been thought. Of course,

*Read before the staff of the Thomas Pavilion, in Fairview Hospital for the Care of Tuberculous Patients, May 19, 1930.

it is natural for a man who gets tuberculosis while working to blame it to his job if possible, especially in view of the compensation laws in this state and others. His doctor is usually willing to agree with him, often out of sympathy and a desire to help him. It is often difficult to prove that his work is not a causative factor, so it is usually implied as the direct cause. The doctor seldom makes an investigation into the working conditions under which the patient developed his disease, but merely takes the patient's word for it. All these may be factors in creating erroneous statistics. Thus, very careful studies of each case of tuberculosis in working men or women must be made if accurate knowledge is to be had with regard to the real relation of industry and tuberculosis. A careful history should be taken in each case with reference to the family tendencies, infections in childhood, exposure to tuberculosis in living quarters, nutrition, home conditions, previous lung diseases, etc.

Britton and Bollman¹ made a careful study of 4791 consecutive cases of open, active tuberculosis, including both sexes, registered at the Chicago Municipal Tuberculosis Sanitarium. Their paper illustrates well some of these points. They state: "In spite of the fact that rather careful and elaborate tabulations were made in order to bring out any relations which occupation could have to the development of tuberculosis, the outstanding thing in all this work was that no definite relation could be shown with any degree of certainty. It became very evident that the ordinary history which was taken in cases of tuberculosis, which, as stated before, included the statement of the individual as to his occupation, did not tell the real story."

Highby² gives the deaths from tuberculosis in San Francisco during the last twelve year period as 10,030. Of these, 73 per cent were men and 27 per cent were women. The heaviest mortality was between the ages of 30 and 39. It is obvious that this condition prevails in the wage earning group of men in the prime of life.

It is true that there are many conditions or influences to which workmen are subjected in industry which may act as direct or indirect causes of tuberculosis. There is the question of posture. This has been emphasized as a factor even in school children. It is impressive to note the figures for the incidence of tuberculosis among clerks and telegraphers and people in similar occupations, which involve bending over a desk or table, with the possibility that posture

may contribute a real problem and industrial hazard in certain trades. There is the effect of industrial fatigue which is however also difficult to accurately estimate. But the most important factor in industry which is a definite, direct or predisposing cause of pulmonary tuberculosis, is the various dusts that workmen must inhale in certain occupations, such as sand blasting or knife grinding on native sandstone, quarrying of sandstone and granite, and certain types of mining, especially where silica in its various forms is encountered, and coal mining or handling of coal or cement. The effect of the last two when inhaled in large amounts is to cause or predispose to bronchitis and pneumonia rather than tuberculosis, but silica dust seems to easily penetrate into the lymph channels where the fine particles set up little or no irritation, while their sharp, knife like edges penetrate into the lung tissues and by insolubility there remain, little or no effort being made on the part of the lungs to expel them. This results in a continuous process of fibrosis in the lungs, which for some unknown reason greatly facilitates the multiplication of the tubercle bacillus, if this once gains entry to the lymph spaces. This is clearly shown by the vital statistics of workers exposed to siliceous dusts, e. g. Barre, Vt., in the center of the granite cutting district, showed for a ten year period a tuberculosis death rate more than two hundred and fifty per cent that of the whole state of Vermont. In a certain axe factory in Connecticut, the men employed in grinding and polishing suffered from a tuberculosis mortality over 1180 per cent that of their fellow employes in the same factory, not exposed to silica dust. This was appreciated by Agricola back in 1556, for he states in his book on metal mining: "Some mines are so dry that they are entirely devoid of water, and this dryness causes the workmen even greater harm, for the dust which is stirred and beaten up by digging penetrates into the windpipes and lungs, and produces difficulty in breathing, and the disease which the Greeks call asthma. If the dust has corrosive qualities, it eats away the lungs, and implants consumption in the body; hence, in the mines of the Carpathian Mountains women are found who have married seven husbands, all of whom this terrible consumption has carried off to a premature death."

As Howes³ has so aptly stated, tuberculosis may be an "industrial accident" as well as cuts, broken bones, etc. He believes, "the man who breaks his leg in the course of his work suffered

a personal injury, and in no less degree the stone cutter who develops pneumonosis or phthisis after years of stonecutting does likewise." On the other hand, he states, "a day laborer who gets worn out after years of arduous labor does not suffer a personal injury any more than the clerk who comes down with consumption while working in a bank or store." There are, of course, many border line cases in which it is extremely difficult to decide.

The Workmen's Compensation Act in most states entitles an employee to compensation who receives "a personal injury arising out of, and in the course of his employment." It seems clear to me that the former is definitely entitled to compensation, while the latter is probably not.

Magnus⁴ brings out an interesting view point on the causal relation between accident and tuberculosis. He feels it must be recognized in the so-called inoculated tuberculosis, that is, when a wound is infected with tubercle bacilli at the moment in which it is acquired. His examples are a butcher cutting himself while slaughtering a tuberculous animal, and a nurse injuring herself from breaking a spittoon, with tuberculosis developing in the wounds. However, this involves, first, the unproven question whether an accident can predispose healthy tissue in such a manner that tuberculosis develops, and second, the fact that "traumatic tuberculosis" must presuppose the presence of virulent Koch's bacilli in the circulating blood, which is very rare, according to our present view.

But these industries must continue, and the great problem is to find out the best way to protect the workmen against these hazards that predispose to tuberculosis. This is accomplished in various ways. First, periodical health examinations for employees, which would detect tuberculosis in its minimal stage while there is still hope for a prompt recovery, and before there is danger of the disease being transmitted to fellow workers. This should include educative campaigns for factory workers, including literature, lectures, etc., the object of which would be to ferret out the minimal case earlier. This requires close coöperation of the employer, factory physician, and nurse with the employees.

Secondly, where dust particles of one kind or another, especially siliceous types, are hazards, they should be dealt with by thoroughly modern and accurate methods. First, the factories where dust hazards exist must be found out, then an accurate determination of the actual dust content of the air under various work-

ing conditions must be made. The weight of the dust and number of particles are the two important factors in determining the extent and hazard of breathing silica dust in the air. The Impinger and Kotze Konimeter are the best instruments to determine those factors.

Finally, effective methods of remedying the condition must be instituted, such as: (1) Preventing dust from getting into the air. (2) Removal of dust from the air by local exhaust ventilation, or the use of enclosed or moist processes. (3) By the provision of masks and respirators for workmen. (4) Physical examination of workers to determine susceptible cases.

Thus, in the South African mines the use of water sprays eliminated over 90 per cent of the dust previously present. In a sand blast chamber whose air contained 60,880,000 particles per cubic foot, the use of a respirator and helmet with positive interior air supply cut it to 156,000.

Finally, there is the problem of dealing with those who have become victims of tuberculosis, in getting them back on the job again. This question has been dealt with very thoroughly by Mr. Hochhauser,⁵ President of the Altro Work Shops of New York, to whose paper I would refer you. I might quote a few of his interesting statements. Referring to the recovering tuberculous patient, he states: "To reawaken his self-respect, he is treated as a sick man trying to get well and not as a dependent whose desire to work is being tried. It was decided to pay on the task basis and never less than the union wage for similar work. At first patients do not produce more than one quarter to two thirds as much as a well worker in the same hours. The patient is working hard, for during the first year after sanatorium treatment it requires greater effort to turn out half his normal capacity.

"The scheme of graduated work at the Altro, which we have called industrial convalescence, is intended as a hardening process and preparation for work in normal industry.

"The workshop is not organized or planned as a training school. The practice is to follow the method that enables the patient to earn quickly and to increase his earnings while on the job.

"The nurse at the factory supervises the patient at work and at rest, for he spends his working day at the workshop resting indoors or outdoors when not at work. The nurse is literally the welfare worker of the establishment,

for her concern is always the patient.

"During 1927, approximately 92 patients earned over \$80,300.00 and received as a subsidy to their wages from charitable funds, \$30,500.00. The sales of the output during the year were over \$230,000.00."

I realize I have only touched on this large and very important subject of the relation of tuberculosis to industry. While tuberculosis is widespread, it is preventable. In the early stages there is every hope for return to normal and healthy life with proper care.

The preventive methods used throughout the United States have been the establishment of medical departments in various industries, and medical supervision among the members of trade unions. The larger industries have accomplished

this task, but it is not yet so in the small industries in general. This is a community problem and community health coöperation is necessary. I have no doubt that the City Departments of Health and the State Departments of Labor will carry out necessary investigations if the local social organizations will bring to their notice the specific plants which need attention.

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SCARLET FEVER CONTROL*

By A. E. BOSTRUM, M.D.

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WAUBAY, SOUTH DAKOTA

Scarlet fever has been considered a dangerous disease, owing to the severity and frequency of complications. The late Professor Greene, of Minnesota, emphasized the statement that "any man is negligent who fails to satisfy himself each day that the urine, heart, throat and ears are unaffected." We were taught this disease was a highly contagious fever of children of unknown origin.

In 1895 a form of streptococcus was found regularly in enormous numbers in scarlet fever patients. This streptococcus was similar to and undistinguished from the organism found in abscesses and erysipelas; and hence, was not accepted as the cause of scarlet fever.

In 1902, Doctor Moser, of Vienna, became convinced that the streptococcus was the cause of scarlet fever. He injected a killed broth culture repeatedly into horses, and by use of the serum produced he found that when large doses were given in severe cases, the symptoms rapidly subsided.

Soon after Moser's contribution, a Russian, Gabritschewsky, tried to immunize children with

toxic broth and killed cultures, and discovered that 15 per cent of the children given one-half c.c. of this toxin developed the typical symptoms of scarlet fever rash, sore throat, strawberry tongue, fever and nausea. None who had recovered from scarlet fever developed the rash, nor did the streptococcus obtained from erysipelas produce the rash. He believed that he had proof that scarlet fever, like diphtheria, was caused by the same organism causing infection in the throat, the toxins were there produced and absorbed causing the toxic symptoms; when the resistance of the body became reduced then cocci penetrated the mucous membrane causing ear trouble, infection of the glands of the neck, or even a true septicemia. This work did not receive such recognition as was its just due, and soon the World War isolated Russia from the rest of the world.

Then in 1918, Dr. Schultz and Dr. Carlton discovered that the serum from a case convalescing from scarlet fever, when injected into the inflamed skin of a scarlet fever patient caused the skin to become as white as normal. This established a positive means for determining that the rash is that of scarlet fever.

*Read at the North Dakota Health Officers Conference, held at Grand Forks, North Dakota, May 6 and 7, 1930.

In 1923 and 1924, Dr. George T. Dick and Dr. Gladys H. Dick reported the transmission of scarlet fever to volunteers by inoculating the tonsils and pharynx with pure cultures of streptococcus hemolyticus. These investigators also produced symptoms typical of scarlet fever by injecting toxin into susceptible persons.

The Dicks then discovered that a weak solution of toxin injected interdermally produced a positive reaction in those susceptible to scarlet fever and negative in those immune. A continuation of these investigations has resulted in the production of an antitoxin produced similarly to diphtheria antitoxin. A few years ago many physicians in South Dakota embraced immunization for scarlet fever with enthusiasm. Results soon dampened their ardor, as only a small percentage developed immunity.

The serum which was produced about that time was employed with gratifying results. We recall a woman developing a fever the day following confinement, next day a scarlet fever rash and temperature 106°, pulse 152. We gave a therapeutic dose of scarlet fever serum about 750,000 skin test doses; in 24 hours the temperature was normal and the patient made a rapid recovery. Such results again restored hope to those who were discouraged by early results of immunization, and recently we have taken new courage, as we see such results as are reported in the epidemic of scarlet fever at Bera College, Bera, Kentucky.

We briefly summarize their report as follows: Bera College has a population of 2,200 consisting of students, faculty and workers, and is situated in a city of 1,600 population. Most of the students were accommodated in boarding halls. Milk was obtained chiefly from the college herd and the college had an independent water supply. Eleven cases of scarlet fever appeared from February 9 to March 11. All had typical rash. There were probably many more cases not recognized.

On March 12 there was a sudden outburst; 94 cases developed sore throat, and were admitted to the hospital. The Kentucky Board of Health was notified and immediately responded. On the second day 80 new cases were reported and the rash began to appear. Then 58, 60 and 29 cases respectively on the following three days, and subsequently only an average of four per day for one week.

The program instituted was as follows:

1. Isolation of all cases in hospital or dormitories.
2. Campus quarantine of all persons connected with the college, based on nose and throat cultures.
3. Skin tests, Dick.
4. Active immunization.

Of 2,232, 834 or 37.4 per cent were positive, but this included 350 in the hospital who had scarlet fever; excluding these a total of 25 per cent were positive.

Of the 834 positive, 702 or 78 per cent were four plus, as determined by plating on blood agar. 132 positive cultures also had positive skin tests; and 139 cases hospitalized with positive throat cultures, but no symptoms except mild sore throat gave negative skin tests. No doubt these cases had developed an immunity, and it seems probable that in some cases several mild attacks occur conferring permanent immunity. Of the 132 cases of positive throat and skin, 54 developed scarlet fever. This number might have been materially reduced had prophylactic serum been given, but this course would likely have reduced the number permanently immunized.

By using a standard method of immunization as recommended by the scarlet fever committee in all cases showing positive Dick test, of 481 cases retested 97.1 per cent were negative to one skin test dose, and 88 per cent were negative to two skin test doses. A sixth dose consisting of 90,000 skin test doses was given to all showing a positive reaction for two skin test doses.

Of the 63 who developed scarlet fever after skin testing, 59 developed it before the second immunizing dose was given, and four before the third dose, none afterwards.

Cultures were taken once per week and carriers became negative in one to three weeks. Those who failed to clear up in four or five weeks usually showed some pathological condition; few of the cases were negative in less than four weeks and some remained positive for five or six weeks. The throat culture method seems feasible for determining the duration of communicability.

The state of Kentucky has added a most valuable contribution to the public health aspect of scarlet fever. The use of the culture method and the skin test here demonstrates a rational procedure for dealing with this disease. If we follow the technique as outlined by the scarlet

fever commission, our Dick tests will be reliable, but we must observe this technique to the minutest detail. Then by using toxin only from the manufacturers recommended by the scarlet fever committee and in doses of 500 skin test doses for the first injection, increasing up to 80,000 skin test doses for the fifth injection, and then after a period of two weeks giving a

sixth dose consisting of 90,000 skin test doses to every patient positive to two skin test doses, we can feel assured that immunization is as effective as that produced by toxin antitoxin in diphtheria. Some time will be required to demonstrate the permanency of the immunization, but from the past records of a few cases this seems reasonably assured.

DIPHTHERIA IMMUNIZATION IN RURAL COMMUNITIES*

BY C. C. CAMPBELL, M.D.

ASHLEY, NORTH DAKOTA

In order that I may say it before you do, at the conclusion of this talk, I am going to say right at its beginning, that I do not know anything about the immunization against diphtheria; that is, nothing that many of you do not know better, and nothing that any of you cannot learn by even a cursory reading of the voluminous reports that come each week in the journals. Still, I happened to be the officer in charge of a campaign for the eradication of diphtheria, which resulted in the nearly complete inoculation of a strictly rural community, made up of fine people, it is true, but not one whit finer than the people of your community; people just as anxious to save their children from the pains and penalties of this disease as you are for yours, and as willing to follow competent instruction in methods of prevention, if the matter is brought to their attention forcibly enough. It is with the idea that I can do something to crystalize your opinion, that I am going to speak to you today.

Just a little history. The antitoxin treatment for active cases of the disease was announced in 1895. I can remember the hopes that we had for this grand new thing, the sighs of relief that went up from the practitioners, that this terrible disease had at last been robbed of its terrors, that it was only a matter of time when the systematic use of prophylactic doses would scorch it completely. It has, too, done wonderful things, becoming one of those lamentably few specifics that we have in the practice of medicine. At its introduction, the mortality stood at about 150 in 100,000, with a case mortality of around 35 per cent. It was reduced in the next

fifteen years to an incidence of 18 per 100,000, with a case mortality of around eight per cent. That was bad enough. The worst part of it is that it stood there. While the rest of the practice of medicine engaged in the most spectacular advances of all its history, while surgery was shuffling off antiseptics and adopting asepsis and gloved hands and conquering one lesion after another, while tuberculosis and syphilis were hounded by a newer therapeutics to become much less promiscuous as trouble makers, while the sanitarians watched typhus, typhoid, smallpox, yellow fever and malaria become almost negligible, these latter officers were forced to admit that after the first marked recession in the incidence of diphtheria, there was no improvement whatever. It stood there always ready to spring into activity. In fact, it really increased with the years, until in 1928, the last comprehensive report I have seen, there was a widespread increase in the total number of cases of diphtheria in the world. 3,000 children died in France, with a mortality of 15 per cent; the same in Belgium, Germany and England; in the United States there was the same marked increase in the number of cases with a mortality of approximately 12 per cent. It did this, in spite of the improvement in the manufacture of the antitoxin, for any one of several reasons: there were cases of lessened resistance in the presence of malignant infection over which the serum has naturally little control; there were late discovered cases over which even its most devoted admirers never have considered that it had any power, because the antitoxin that the horse develops as a permanent thing is very rapidly lost through destruction of the foreign protein that

*Read at the North Dakota Health Officers Conference, held at Grand Forks, North Dakota, May 6 and 7, 1930.

it is, when injected into humans. In addition to these, there were the carriers. The group testing of children early showed that there was an increased average susceptibility to diphtheria in the homes of the well-to-do as compared to the children from the poorer quarters of the same city. This was undoubtedly due to the repeated lowgrade infections which had given to these latter children a natural immunity, which we now know can be artificially produced.

This looked like a gloomy picture, and it would have been so had it not been for a few bright spots that shone here and there on the map of the United States first, and later in other parts of the world. Here and there were cities and towns and communities that had dropped the case incidence down to almost nothing, right in the presence of the other picture. For instance, the city of New Haven had a death rate of 1.7 while the state of Connecticut had one seven times as great; in Auburn, N. Y., a city of 37,000 people, there was but one case from July, 1923, to January, 1926, and none since, where the death rate had previously been 48 per 100,000; Rochester's rate had declined from 28 in 1920, to 4 in 1924; Syracuse dropped to 2.6; Manchester, N. H., which had 254 cases with 27 deaths in 1924, and 31 with 6 deaths in 1925, dropped to 12 cases with 3 deaths in 1926, and to 9 cases with 2 deaths in 1927. There was something strange in this lopsided picture, for the germ of diphtheria has always been an indiscriminate one, appearing in the homes of the frantically careful perhaps a little oftener than it did in the hovels of the completely careless, and it also came into the cities, towns and country with about the same average incidence per 100,000. Still, these cities, and many others I could mention, showed virtually a clean slate. It is, therefore, no wonder that Ball of the Illinois Board cried out: "In spite of the fact that toxin-antitoxin will prevent diphtheria and that the Schick test will point out the susceptibles, diphtheria continues to be the third cause of death in children under six years, and the mortality in recognized cases is still ten per cent."

Not much more than a hundred years ago, the officers of health had a convenient peg on which to hang their sins of omission. Common belief allowed them to call these epidemics "visitations of God." But such a convenience is no longer tenable, any more than is that good old Presbyterian doctrine, "infant damnation." In fact, the pendulum has swung so far the other way that the Secretary of the Texas Board is re-

ported to have said that, if any child died from diphtheria nowadays, some one ought to hang. If, in this drastic impeachment, our Texas colleague meant the health officers, I am afraid that I would have to have as many lives as the proverbial cat to be able to speak to you today, for last year we had an epidemic of diphtheria which got out of control. It is not part of today's business to discuss the reasons why, but I might say, in passing, that they were probably the same in this as in most other epidemics, namely, first and foremost, a faulty clinical sense on the part of myself and fellows in the first obscure cases; second, the presence of unrecognized carriers of infection; and third, a too slavish dependence upon a negative report from the laboratory as a reason for early release from quarantine, as there are far too many chances for error in these cultures from the time they leave the laboratory until they are deviously returned. The Secretary of our State Board has repeatedly stated that the man in the field must be the judge of the quarantine measures and this puts the onus back on the before mentioned faulty clinical sense, and we have the vicious circle that makes for an epidemic completed.

I will not speak here of the efforts made to find the carriers. We determined on a county wide inoculation with toxin-antitoxin. As anything less than ninety per cent inoculated in a community can not be called a success, since there is no one among the authorities who says that this treatment is a positive preventive, merely a means of making the field antagonistic to the growth of the infection, there had to be some pretty active advertising. Of course, the fact that the community was anxious, not to say exasperated, at the spread of the disease, made the time propitious for such a campaign. Still, there were some methods of stirring up enthusiasm that might be used in your district. It occurred to me at once that the circus had a pretty good method for getting the people into the tent, and some of these could be used if one were to forget his personal dignity. One of the few illusions that a quarter of a century of prairie practice has left me is that I have a personal dignity. At any rate the sacrifice of this intangible thing was a small price to pay for the life of a single child. One of the methods for publicity was the dodger which I am showing you. It happened that when we had all the arrangements made for beginning the work, awaiting only the opening of the school term, that I received the telegram, or rather one something

like it, from Dr. Jungman. Its wording I changed a little with his consent and had the county flooded with dogers like this.

Consent blanks were distributed to all the grade schools. The teachers were instructed as to how they were to be filled out. Not enough attention was paid to the complete filling out of the questionnaire. This was a mistake that I will speak of in a moment.

Every social agency, school board and school-room was visited several times. This made quite a lot of running around, but I think that it paid. As a consequence, nearly every child in these grade schools was treated, either by the Board or by the family physician.

After the above was fairly well under way, I had the County Superintendent of Schools map out an itinerary for us. He picked out one schoolhouse in each of four townships, near a graded road, thinking that the parents, since they had to bring the children to some place, would not mind a few miles on a good road. He was mistaken in this. The next time I shall contrive to get to each school district, at least, if not to each school.

A great deal of the success of a campaign in a strictly rural district depends upon the enthusiasm that you can create in the mind of the school-teacher. The next time I have such a campaign in mind, I shall wait until after some teachers' convention and speak to them there, endeavoring to get them interested. Of course, if there is diphtheria in the school district, it does not need much adventitious aid.

As it turned out, some districts ended with approximately 100 per cent treatment. Others were so far down the list as to be negligible, as the inoculation of only a few is really detrimental, since it gives a false sense of security to those few who have been treated. It might help somewhat as a private adventure, but as a public health one it is a failure.

The total result of the work was that there were about 3,000 treatments in a district that has a school enrollment of 2,200. Every child over six months of age was asked for and every young adult, whether over school age or not. For all residents of each school district the school board paid for the vaccine while the individual paid one dollar for the three treatments. This price was too small for the rural districts, as the mileage necessarily covered did not pay wages.

At no time was any attention paid to Schick testing for several reasons. In the first place,

it is not properly a public health, but rather a private health measure, taken for the assurance of the individual. Second, it is unnecessary, since all investigators agree that there is a negligible number of Schick negatives between one year and six. Third, in my humble opinion, and remember that this is a very humble opinion, this is a job for an expert. There is no objection to its use in private practice, but there should always be a control injection of protein, with the toxin destroyed, on the other arm, as a guide to the reaction.

In these mass inoculations, one runs across many cases of what are seemingly allergy. In ours there were none of any great consequence, although there were many cases where the arm was markedly swollen. Oddly, this might be any one of the three doses.

As I mentioned above, I believe that it is a mistake not to have all the items on those consent blanks filled out, as, if there is a history of protein sensitization, it would be well to proceed cautiously, so as not to disturb those who take alarm easily. On the whole, I think that it can be most emphatically said that the whole proceeding is harmless.

But the proceeding, from what I can discover, has to approach the danger mark. If the toxin is completely neutralized with antitoxin, as seems to be the case with the vaccine used in those parts of Germany and Austria where there seems to be a law against the use of any unneutralized free toxin, the results as a preventive appear to be negligible. We used throughout the toxin-antitoxin, prepared according to Park. In this there is an appreciable amount of the free toxin.

We had no experience with toxoid, which has the toxin neutralized with formaldehyde. This was because of the rather violent reactions that we believed occurred with this variety in adolescents, and we were appealing to these as well as to the preschool children, for whom the use of toxin-antitoxin is better indicated, in the absence of preliminary Schicking. However, I have since received a bulletin from the University of Toronto, which reports about 600,000 treatments with toxoid given up to December, 1928, without any serious sequelæ being observed. Rather, Fitzgerald says, as a result of their research, "We have concluded that toxoid is superior to toxin-antitoxin for its absolute innocuity; because it is antigenic while the other possesses a slight specific toxicity; because its immunizing value is easily determined; and because it does not contain any foreign or heterologous protein."

Whether the other physicians should be asked to participate in the campaign as regular workers is a matter that will have to be decided according to local conditions. New York believes that they get better results by acting with the profession. But the job's the thing. If one thinks that better results can be had that way, by all means take that way. But there should never be any confusion of thought as to who is directing the campaign. It must not dodder along, waiting the convenience of a busy practitioner. It should be under high pressure all the time until finished. The sympathetic endorsement of every social agency, clubs, leagues, and school boards should be gained.

MISCELLANY

THE SCOPE AND AIM OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

At the spring meeting of the Committee on the Costs of Medical Care in Washington, May second and third, 1930, a special committee of private practitioners was appointed to consider the relation of

the committee to the private practitioners of the country. This committee, composed of the undersigned members, now submits the following statement for the information of these practitioners on the scope and aim of the committee's work.

It was clearly recognized by all present at the spring meeting that the committee has undertaken a program of studies which in its scope goes far beyond that part of the cost of medical care which physicians provide. The expense of several other kinds of service now looms large in the total cost of many illnesses. In addition, special emphasis was given at the meeting to the question of the adequacy of the various services available in a community. Finally, the committee adopted a statement of three fundamental principles proposed by the Chairman, which should go a long way toward reassuring those who have been apprehensive regarding the nature of the committee's ultimate recommendations.

I

The committee is interested in far more than the physician's bill, which, in many instances, is considerably less than half the total cost of illness. Hospital care, nursing, dentistry, laboratory examinations, and medicines often involve considerable expense, as is clearly shown by several of the committee's studies which are now being completed or have already been reported upon. In one middle-western county recently surveyed, the expenditures for various kinds of medicines constituted over one third of the total expense for medical care, and were 20 per cent greater than the costs of physicians' services. It is also becoming apparent that a great

deal of money is being spent for useless medicines and for various irregular forms of treatment which do the patient no good or which may result in positive harm.

In order to indicate clearly the broad scope of the committee's work, it was decided at the spring meeting to make a slight change in its name. The word "cost" is to be changed to "costs." The complete name of the committee, with subtitle, will henceforth be "The Committee on the Costs of Medical Care, Organized to Study the Economic Aspects of the Prevention and the Care of Sickness, Including the Adequacy, Availability and Compensation of the Persons and Agencies Concerned."

One vital problem before this committee, declared a prominent physician member, at the recent meeting, is the determination of what is reasonably adequate care. In many cases of obscure disorders and serious illness, expensive facilities are essential. Presumably, there must be available in the community well trained general practitioners, certain specialists, dentists, nurses, hospitals and health agencies,—trained and well equipped to do their part in providing all the care that the individual may need. A plan of the executive committee, to conduct a study to determine standards of adequate medical care, under the general direction of some well known competent physician and with the assistance of a committee of fifteen or twenty other physicians, was heartily endorsed at the meeting of the general committee.

The aim of the committee is to study the problem described by Dr. Olin West, the Secretary of the American Medical Association, as the one great outstanding problem before the medical profession today. This he says is that involved in "the delivery of adequate, scientific medical care to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life." The committee is endeavoring to establish a foundation of facts which have an important bearing upon this problem. On the basis of these facts, it will propose recommendations for the provision of adequate and efficient therapeutic and preventive service for all the people at a reasonable cost to the individual, which, at the same time, will provide physicians, dentists, nurses, hospitals and other agents assurance of adequate return. This is not a new statement of aim. Recent discussion, however, has given new emphasis to certain aspects of it. There are important items in the cost of sickness other than the physician's bill; and the adequacy of the service provided must be considered. The program of studies is a comprehensive one. It deals with questions of supply, demand, distribution and costs of all kinds of services, both preventive and curative; the relation of these costs to other expenses; the return accruing to the practitioners and various agents furnishing medical services; and especially will it seek to determine what standards of adequacy may reasonably be expected.

II

Dr. Ray Lyman Wilbur, Chairman of the committee, proposed at the meeting, May second, a statement of three fundamental principles for the con-

sideration of the committee. This statement was referred to each of four subcommittees which held sessions during the two day meeting. The entire committee, at its last session, May third, adopted with a few verbal changes the three principles. These will be of special interest to the physicians and dentists. They follow:

1. The personal relation between physician and patient must be preserved in any effective system of medical service.

Medical service is and doubtless, by its very nature, must remain a distinctly personal service. Even in this age of standardized commodities for the table, ready to wear clothing, and interchangeable spare parts for all types of machines, there has been no plan suggested for the reduction of medical diagnosis and treatment to basic units which can be ordered from travelling salesmen or acquired through correspondence courses. The physician must see his patient, and see him, in many cases, over an extended period of time if the diagnosis and treatment are to achieve the greatest possible accuracy and efficiency. There is no substitute for personal observation.

Man is not a standardized machine, and each individual reacts to the conditions of life in a manner in some respects unique. In the treatment of disease, this individual variation is a factor of great significance and can receive due consideration only when the practitioner has known the patient for a considerable time and maintains a personal relation with the patient.

2.—The concept of medical service of the community should include a systematic and intensive use of preventive measures in private practice and effective support of preventive measures in public health work.

The cost of adequate curative treatment is now high, and may continue to increase as expensive procedures resulting from scientific progress become more widely used. Sickness, in addition, involves other personal and social costs, some of which cannot be measured in monetary terms.

The outstanding achievements in scientific medicine have been made in the preventive rather than the curative field. Knowledge now available for the control of malaria, tuberculosis, smallpox, diphtheria, pellagra, typhoid fever, hookworm disease, and goiter, if effectively applied, would make un-

necessary a considerable proportion of the present expense for the cure of sickness.

3. The medical service of a community should include the necessary facilities for adequate diagnosis and treatment.

From the standpoint of effective diagnosis, many diseases, such as tuberculosis, cannot be recognized promptly in their early stages without the aid of elaborate technical equipment. From the standpoint of adequate therapy, if the best of modern technique is not immediately available, complete cures are either delayed or rendered impossible of attainment. To cite a specific illustration of the improvement of modern therapeutic procedures over those of ten years ago, the time required for treatment of fractures of the hip, and the percentage of permanent invalidity resulting from that injury have each been reduced by more than half.

We cannot be content with anything except the best possible service that modern science can provide, and it is therefore imperative that modern scientific equipment for the diagnosis and treatment of disease be available to the practitioners of medicine in every community.

BOOK NOTICES

SYMPTOMS OF VISCERAL DISEASE. A study of the vegetative nervous system in its relationship to clinical medicine, by Francis Marion Pottenger. fourth edition, with 87 text illustrations and ten color plates. St. Louis: C. V. Mosby Co., 1930. Price \$7.50.

In writing this book Pottenger has brought out very clearly the relations of symptoms to disease. In the first part of the book he clearly shows that there is a definite relation between the sympathetic, para sympathetic and general nervous system, giving in detail the formation of each. Farther on he deals with the effects of drugs on the two systems of nerves and then in the last part of the book explains referred pain, pain points and gives a logical reason for very many indefinite symptoms. The book is very clearly written and gives in a concise form material that one previously had to wade through page after page in the older anatomies and neurologies to obtain.

—ADAM M. SMITH, M.D.



**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Myrtle C. Lee, B.S., Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Who's Who in Public Health in North Dakota



Albert M. Limburg, M.D., Fargo, N. D. During the past year, and especially the last quarter, he established rural preschool clinics in the ten districts of Cass County, with the full coöperation of the physicians in the several districts.

Dr. Limburg was born in Maple Works, Wis., August 17, 1882, was graduated from the high school at Hunter, North Dakota, and from the Medical School of the University of Minnesota in 1903. Thereafter he located at Bowbells, North Dakota, where he was in active practice for 15 years, being County Health Officer of Burke County from the time of its inception until his removal to Fargo. He was also assistant health officer for Old Ward County for many years and U. S. Government Inspector of Immigrants at Portal, North Dakota. He is married and has two grown children, Margaret and Albert, Jr.

We take pleasure in presenting the able, active, progressive County Health Officer of Cass County.

The basic minimum qualifications for "Who's Who in Public Health for North Dakota" are:

1. Complete standard record kept.
2. Member of the North Dakota Health Officers Association.
3. A definite, well organized public health program.
4. A successful, outstanding piece of health work completed during the quarter and reported to the State Health Department.

Tourist Camps

Tourist camp sanitation is of great public health importance. A well kept, well managed, comfortable and safe camps not only a splendid advertisement for any town and city, but also brings about a material reduction of diseases which are most prevalent during the tourist season.

Realizing the importance of safe camps in North Dakota, the State Department of Health through the local county and city health officers, has already undertaken a state wide campaign for the supervision of such camps. The aim of this campaign is to have better supervised, well kept, safe and sanitary camps.

Each local health officer inspects, scores and reports on all camps within his jurisdiction. If his report shows that the camp has complied with all

regulations of the State Department of Health, which call for an adequate and safe water supply, adequate garbage and sewage disposal facilities, and general sanitation, the health officer is supplied with a certificate of approval which is to be posted at the camp. These inspections are to be made every thirty days during the summer season and the State Department of Health each month publishes a list of all approved camps.

The Death Rate for 1929

North Dakota's death rate for 1929 was 8.4 as compared with 8.5 in 1928, a difference so slight as to be insignificant. The number of deaths from different causes is distributed much the same as in previous years. The preventable diseases (Group I of the International Code) claimed only 749 in 1929 as compared with 815 in 1928. It is interesting to note in this connection that deaths from tuberculosis decreased from 289 to 227, but there were more than four times as many deaths from meningococcus meningitis as in 1928. 1929 figures show the first decrease in the total number of accidental deaths since 1924.

Registration

The morbidity registration survey of the State made for the purpose of determining the standard of qualifications of the State for membership in the United States Morbidity Registration Area has been completed. A preliminary check up of the returns shows a passing mark, with the possible exception of typhoid fever. A recheck will, no doubt, clear this up also.

Preschool Children

During 1929 a total of 120 children were examined at preschool conferences in Ramsey County by the Division of Child Hygiene. All of these children were delivered by physicians and 75 were born in hospitals. The entire group had perfect scores with regard to nutrition, heart, mentality, mumps, diphtheria and infantile paralysis.

Minot Health Activities

Dr. V. B. Dowler of Minot kindly consented to represent the State Health Department at the Northwest Fair in July. Minot's fairs are splendidly conducted by a live bunch of its business men. Dr. Dowler is fast becoming really public health minded. He, with the other physicians, are to be congratulated on the fast reduction made in infant mortality during the past three years.

REPORT A STILLBIRTH AS A BIRTH AND A DEATH

(Continued on page 346)

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—570.

The case is that of a negro, 26 years old, who was admitted to hospital on April 10, 1930. He had had an upper respiratory infection for two weeks. On March 31 he complained of feeling ill because of his cold. He went to work the next day and worked all the week, but on April 4 complained of a throbbing headache across the bridge of his nose. On the fifth the pain was relieved for a short time by powders. On the eighth there were vomiting spells and pain in the stomach. On the ninth he became very restless and was sent to the hospital with a diagnosis of possible meningitis.

There was some rigidity of the neck. There was slight cervical adenopathy. There was a loud systolic murmur at the apex of the heart. The lungs were apparently normal. There were no abdominal findings. Kernig was questionable. Pupillary reflexes were absent, biceps and abdominals were present. There was no Babinski. Spinal tap was done and the fluid was found to be under increased pressure and cloudy; it contained 14,760 cells; 99 per cent polymorphonuclears. Smear of the spinal fluid showed numerous diplococci and some short Gram positive organisms, apparently bacilli. Injection of fluid in a mouse failed to produce death. Peritoneal smear after killing the animal revealed the presence of both Gram positive bacilli and diplococci which were not encapsulated. The patient died about 36 hours after admission to the hospital.

Antimeningococcus and antipneumococcus sera were given intraspinally, and ethylhydrocupreine was given into the left internal carotid artery.

Post-mortem report. A thick purulent exudate is found over the base of the brain under the pons and the frontal lobes. No definite accumulations of pus elsewhere. Both frontal sinuses are filled with a purulent exudate. The other accessory sinuses are normal. The middle ears and mastoid cells are normal.

Cloudy swelling of the heart, liver, and kidneys. Terminal bronchopneumonia.

Diagnosis. Purulent frontal sinusitis with secondary meningitis.

Comment. The infection evidently spread from the frontal sinus into the meninges. The organisms presumably gained access to the meninges through the emissary veins.

Autopsy—30—558.

Man, 52, admitted April 8, 1930, complaining of pain and tightness over the heart for the past four weeks. The pain radiated to the neck. During the past four weeks he had had choking spells with dyspnea and orthopnea which wakened him at night. The pain over the heart would come on especially after exertion and was very severe. He had had a marked cough for the past six weeks and raised considerable sputum with a foul odor. He was much worse on the day before admission.

Since 1928 he had had headaches over the top of his head which were worse at night. About a year ago a physician told him that he had high blood pressure.

On the day of admission he had a severe attack in which his entire body became cyanotic. During this attack he was sent to the hospital. Upon admission he complained of dyspnea, pain over the heart, cough, and choking spells. The eyes reacted slowly to light and accommodation. Teeth were very poor. The tonsils were slightly enlarged. The face was very cyanotic. Respiratory rate 28. Dullness over both lung bases on percussion; bubbling râles over the lower chest both anteriorly and posteriorly. No bronchial breathing. The heart was enlarged to the left; the tones were very distant; no murmurs could be distinguished.

On April 8 hemoglobin was 102 per cent; red cells 4,890,000; white cells 29,200 with 92 per cent polymorphonuclears, 7 per cent lymphocytes, and 1 per cent monocytes.

In the afternoon of April 9, the patient became severely dyspneic and cyanotic, and his body was cold and clammy. Death occurred at 4:25 P. M. the same day.

Post-mortem report. 1000 cc. of clear fluid in the left pleural cavity; 1500 cc. in the right; old pleuritic adhesions on both sides. Heart measures 16 cm. transversely; weighs 475 grams; the valves are all normal. There is very marked hypertrophy of the left ventricle. There is diffuse fibrosis in the muscle of the left ventricle. An aneurism six cm. in diameter of saccular type is found in the anterior wall of the left ventricle. The aneurismal wall is composed of fibrous tissue and is lined internally by a thrombus. The wall of the left ventricle is thinned and fibrous. The left coronary artery shows

complete occlusion for a distance of about two cm. immediately below its origin. The lumen is obliterated by atherosclerosis and an old thrombus. The right coronary artery shows marked atherosclerosis and a recent thrombus.

There is edema of the lungs. Passive congestion of the liver and spleen.

Diagnosis. 1. Coronary sclerosis with marked myocardial fibrosis. 2. Edema of the lungs.

Comment. A slow occlusion of a coronary artery causes fibrosis of the muscle, and a thrombosis or rapid occlusion causes infarction. Apparently there had been thrombosis of the left coronary some time ago which resulted in infarction, and the absorption of the infarct produced the aneurism in the wall of the left ventricle. The immediate cause of death was right coronary thrombosis. Coronary sclerosis often causes death without the presence of a thrombus.

Autopsy—30—609.

A man, 29 years old, was admitted to hospital on April 13, 1930, complaining of dyspnea on exertion since January 1. This had become worse gradually until six weeks before admission, when he noted edema of the ankles. There had been some tenderness in the right upper quadrant and swelling of the abdomen. There was a history of rheumatic fever four years previously.

He was rather pale and quite dyspneic. There were prominent pulsations of the vessels of the neck. The heart was enlarged to the left. There were both systolic and diastolic murmurs. Blood pressure was 102/46. There was some impaired resonance over the left base with a few high pitched râles. The liver was down five fingers and was tender. Duroziez sign was present. There was no edema.

Urine showed 4+ albumin; specific gravity 1013; it contained 60 to 75 red cells and 60 to 75 white cells. Blood: hemoglobin 68 per cent; red cells 3,600,000; white cells 15,650 with 77 per cent polymorphonuclears.

The temperature was 97.5° on admission; the next day it rose to 101° and on the fourth and fifth days it again rose to 10°. Thereafter the temperature was subnormal until the eighth day when he died.

Blood culture grew streptococci. Electrocardiogram showed left preponderance, tachycardia, and notched Q. R. S. in the third lead. Blood urea was 41 mg., Van Slyke 43 per cent and P. S. P. was 75 per cent in two hours. X-ray showed marked cardiac enlargement of the left ventricular type in the third stage. Death occurred quite suddenly on April 20. The clinical diagnosis was subacute bacterial endocarditis of the aortic valve.

Post-mortem report. Moderate edema of the feet. No ascites. Each pleural cavity contains about 350 c.c. of clear fluid. The pericardial sac is normal. The heart is 16 cm. wide and weighs 520 grams.

The valves are normal except the aortic which is thickened and retracted and covered by large soft vegetations. Marked edema of the lungs; small infarct in the right upper lobe. The spleen weighs 380 grams and shows an old infarct. The liver shows marked chronic passive congestion. The kidneys are enlarged and cloudy, and the left kidney shows a number of small recent infarcts.

Diagnosis. Subacute aortic bacterial endocarditis on an old rheumatic valve defect.

Comment. The old valve defect evidently is traceable to the attack of rheumatic fever four years before. About half the cases of bacterial endocarditis develop on old rheumatic valve defects.

Autopsy—30—820.

A woman, 35 years old, admitted to hospital May 17, 1930; died 1:08 A. M., May 30. She was gravida 3, para 2. About November 15, 1929, she began to menstruate and continued to flow daily for seven months. Dizzy spells and black spots before her eyes four months ago. Loss of weight of 12 lbs.; 140 lbs. last summer; present weight 128 lbs. Headache at irregular intervals for past ten years. Backache in lower portion of back for the last two weeks.

Menstruation began at 14, when she married first time. Periods regular, 28 day intervals, flowed four to five days. Headache for day before and backache on first day of menstrual period. No excessive bleeding or pain. Two children from first marriage, now 18 and 20 years old, living and well. Husband died 1919 of pneumonia at the age of 25. Had miscarriage in 1914, cause unknown, at third-month. Second marriage June, 1928. Second husband, 37, living and well. No offspring. Family history: father 69, living and well; mother dead at 59 of cerebral hemorrhage; four brothers, five sisters living and well. No cancer history. Appendectomy ten or fifteen years ago; tonsillectomy three years ago; diagnostic curettage, 1929. Had been diagnosed chronic gonorrhoea, and was supposed to have contracted infection from second husband.

Well nourished; quite comfortable. Eyes, ears, nose negative. Tonsils out. Teeth poor. No cervical adenopathy. Chest normal. Heart normal. Blood pressure 126/87. Pulse 84. Abdomen: no masses, no rigidity, no tenderness. Spine normal. Murphy percussion negative. Extremities normal. Reflexes normal.

First consulted a physician in February, 1930, for bleeding. Microscopic examination by Department of Pathology showed carcinoma. Since that time she had been packed five or six times for bleeding. Cervix very badly eroded and spongy, presenting an ulcerated area with irregular base and bleeding freely. Bimanual revealed uterus pushed to left. Corpus normal in size and in anterior position. Globular mass in right adnexa, tender, firm, attached to uterus. Left adnexa indurated; no definite mass palpable. Diagnosis: carcinoma of cervix, type III. Carcinoma of fundus of uterus with extension to cervix.

Urine: albumin 2+; many white blood cells and red blood cells. Hemoglobin at entrance 86 per cent; white blood cells 6,800; polymorphonuclears 73 per cent; lymphocytes 26 per cent; eosinophils 1 per cent. Blood group 4. May 20, blood urea nitrogen 28; uric acid 7.7; carbon dioxide 42; blood sugar .134. Blood Wassermann positive.

Given 3,000 millicuries of radon in brass capsule with rubber coat May 20. Postoperative, vomited. Given retention enema of tap water glucose. Had urinary retention, was catheterized. May 21, still nauseated. Radon removed. Some bleeding from vagina. Emesis at frequent intervals. Pulse 100, good; temperature 101°. May 22, still nauseated; felt very uncomfortable; emesis; not bleeding very much; no evidence of retention in blood; retention catheter removed. May 23, had severe chill, following which temperature went to 103°, probably due to infection in ligaments with pus formation. Abdomen very tender with rebound soreness. Nausea and vomiting occasionally. Pulse good; not much bleeding from vagina. May 24, another chill, 15 minutes; temperature to 105°. Emesis following. Felt very uncomfortable. May 25, temperature normal; still uncomfortable; considerable pain in right lower quadrant; abdomen tender all over; rebound tenderness in lower portion. May 26, positive Wassermann. May 27, still tender all over; vomiting occasionally; took fluids fairly well; tongue coated; uremic odor; involuntary urine and incontinence. May 28, showing signs of uremia. Patient semiconscious. Abdomen still tender in right lower and left lower quadrants. Lungs clear. Eyes jaundiced. May 29, blood urea nitrogen 65.3; uric acid 6.2. Intravenous glucose given. Patient drowsy all the time. Retention enema. Seemed to be making fair response until this date. Some icterus but not much. On this day she was definitely jaundiced, weak, and had a rapid, thready pulse. Some evidence of peritonitis. No râles heard in chest. Condition now quite serious and seemed fatal. At 8.00 P. M., day of death, patient was found comatose; marked difficulty with respiration; profuse perspiration; pulse fast and thready; blood pressure 50/0. Adrenalin given and repeated; intravenous glucose given. Patient improved markedly toward end of glucose injections. At 11:45 pulse became imperceptible again. Caffein sodium benzoate given. Heart beating regularly; râles in bases. Exitus.

Temperature rose steadily after admission from 98° to 105° with steplike curve; pulse 70 to 130; respirations from 17 to 40. Had many chills followed by sharp rises of temperature.

Post-mortem report. The cervix shows an ulcerated mass which extends into the body of the uterus. There is purulent exudate in the right broad ligament. Suppuration in the pelvic lymph nodes about the uterus. Acute diffuse purulent peritonitis. Terminal rheumatic endocarditis of the mitral valve. Terminal bronchopneumonia.

Diagnosis. Squamous cell carcinoma of the cervix, resulting in pelvic suppuration and general peritonitis.

Comment. In some instances carcinoma of the cervix causes death because of the development of infection in the carcinoma and extension of the infection to the peritoneal cavity. The use of radium may have hastened the development of the infection.

Autopsy—30—818.

A man, 22 years old, admitted to hospital May 27, 1930; died May 30. He was taken suddenly ill May 21 with very severe pain in the epigastrium and right upper quadrant. Vomited soda water he had taken. Otherwise no emesis. May 22, rigidity present, right upper quadrant. Pulse 100. Temperature 101°. Continued about the same with some improvement until the morning of May 27 (6 days) when he had a spell of severe pain in the bladder region of the lower abdomen with rigidity of abdominal muscles. Bowels moved every day. No definite diagnosis made.

Chief complaints: pain in abdomen; vomiting; tenderness; fever; attacks of heartburn for many years, relieved by soda; attacks of belching and more frequent gastric distress for past three weeks. Patient apparently had an ulcer history for many years but never dieted. Ate at restaurants most of the time. Used soda for relief. More trouble for past three weeks with belching and gastric distress. Sudden onset of colicky pain one week ago. Required two injections of morphine sulphate for relief. Next morning abdomen was stiff as a board and pain still present. No vomiting since.

Head, neck, and chest negative. Abdomen showed diffuse rigidity; muscle spasm marked; some rebound tenderness but not marked. Resonant note over entire right side, through liver dullness which could not be elicited. Right diaphragm higher than left. Had taken only liquids since onset of present illness (orange juice and oatmeal). Had a chill day of examination. Stated that he had been constipated for three weeks. Past history good. No previous attacks like the present one. Blood pressure 122/80.

Urine: occasional white blood cell. Blood: hemoglobin 77 per cent; red cells 4,250,000; white cells 13,400; polymorphonuclears 92 per cent; lymphocytes 8 per cent. Polymorphonuclears showed a decided shift to the left and appeared very granular and toxic. Blood group 2. X-ray of abdomen showed perforated gastric ulcer, pneumoperitoneum, subphrenic abscess, secondary pleural effusion. Fluoroscopic and film examination of the abdomen in various directions. Very large accumulation of gas below right diaphragm and definite fluid level below this which could be clearly made out. The liver was displaced downward and somewhat anteriorly. The whole appearance was characteristic of a perforated viscus with a localized subphrenic abscess and a large accumulation of gas and fluid on right side. The right diaphragm was pushed up so that there was no movement whatever. Considerable thickening of the pleura above the dia-

phragm and probably a small accumulation of fluid also.

Admitted to hospital May 27, 6:30 P. M. To operating room at 10.20 and returned at 11:25, conscious. High left rectus incision made and the exudate mopped out of the pleural cavity as well as possible. Drain was put in and fluid aspirated. No attempt to locate source of peritonitis.

May 28, looked fair; pulse very rapid; prognosis guarded. Walling off of process thought to make condition more favorable than otherwise. May 29, condition critical. Rectal examination showed abscess as before. Forced fluids. Later rectal examination did not show enough findings to warrant opening for pelvic drainage. Later, a mass still felt. Smear from abdominal abscess showed gram positive cocci, single and in pairs, probably streptococci.

Temperature 99° to 106°; pulse 90 to 150; respirations 20 to 40.

Post-mortem report. Perforated ulcer 2 cm. in diameter on the anterior surface of the first part of the duodenum. Acute fibrinopurulent peritonitis.

Comment. This is the usual course of a neglected perforated duodenal ulcer. The record shows an ulcer history for several years.

Autopsy—30—768.

Man, 21, admitted to hospital May 8, 1930, complaining of pain in the chest, and dyspnea. The day previously he had been discharged from the medical service. At about 10 A. M. on May 8 he was seized with a sharp pain in the right chest and costal margin. This later spread over the entire abdomen. The patient did not feel nauseated nor did he vomit. He was seen by a physician who believed the condition to be peritonitis. He gave the patient a hypodermic and sent him to the hospital. On admission the patient stated that he had a pain in the upper right quadrant and compared the pain to a toothache, which radiated upward to the mid-chest region anteriorly. He had had his chest tapped on previous occasions.

Physical examination showed a white adult male of 21 years. He was undernourished. He was sitting up in bed having some difficulty in breathing. The ears, nose, eyes, and mouth showed nothing of note. The chest showed expansion to be poor and less on the right. Percussion revealed flatness on the right side except in the upper fourth. The left side seemed to be clear. Auscultation revealed a few faint breath sounds in the upper chest on the right. The left side was fairly normal. The heart showed a diffuse impulse. The heart was enlarged and pushed over to the left. Auscultation showed the sounds to be fast and pounding. Just to the left of the sternum and left costal cartilage there was a murmur. The pulse, rate was 140. The abdomen

showed a normal contour; it was fairly rigid; there was no tenderness and there were no masses. The extremities and reflexes were normal. The patient had been taking 15 grains of thyroid extract for nephrosis.

A right chest aspiration revealed 1500 c.c. of milky, grayish fluid. On May 11 the patient still complained of pain in the right lower chest. The breathing was not as good as on the previous two days. On May 12, at the base of the heart there was a to-and-fro murmur which was scratchy in character. It was close to the ear. The blood pressure was 180/100. The pulse rate was 115. On May 14 the pericardial rub was more pronounced. About 900 c.c. of fluid were withdrawn from the right chest. On May 15 the blood pressure was 180/90.

On admission the temperature was 99.4°. The pulse was 140. After admission the temperature varied between normal and 99.8°. The pulse varied between normal and 140.

Urine: straw colored; alkaline; specific gravity 1008 to 1016; heavy trace of albumin; no sugar; an occasional hyaline cast; an occasional leukocyte; no red blood cells. The pleural fluid showed specific gravity 1014. On May 9 creatinin was 3.9 mg., and urea nitrogen was 53.9 mg.

On May 15 a re-ray showed increased fluid in the right chest with collapse of the right lung, apparently with some pneumothorax present. He died May 18.

Post-mortem report. Moderate edema. Serofibrinous peritonitis, pleuritis, and pericarditis. 500 c.c. of cloudy fluid in the peritoneal cavity, 300 c.c. in the left pleural cavity, 1500 c.c. in the right pleural cavity. There is a large amount of shaggy exudate over the right lung which is somewhat encapsulated and may be called an empyema. The heart weighs 387 grams; moderate left ventricular hypertrophy. Right bronchopneumonia. No passive congestion of liver or spleen.

Right kidney 261 grams, the left 288 grams. External surfaces are smooth. Surfaces exposed by cutting are pale, cloudy, and light yellow in color. Microscopic examination of the kidneys shows large swollen cells in the tubules with some fat; no tubular atrophy; the glomeruli show partial obstruction of their capillaries by intracapillary proliferation of endothelial cells.

Diagnosis. Lipoid nephrosis of mixed type with peritonitis, pleurisy, pericarditis, and bronchopneumonia.

Comment. This is an example of lipoid nephrosis of the mixed type. It will be noted that it is not pure lipoid nephrosis, since there is hypertension and moderate retention of metabolites. It is really a chronic glomerulonephritis with partial glomerular obstruction. In the older terminology this would be called chronic parenchymatous nephrosis.

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"DOCTOR SEROCOLD"

The editor was presented with the above-entitled book (published by Doubleday, Doran & Co.) a day or two ago, and it afforded him so much pleasure in the reading that he felt constrained to call it to the attention of our readers as a book that medical men in general will find most interesting, dealing as it does with the daily life of a busy practitioner. Personally, we are very glad that the author, Helen Ashton, ventured to write the story of one day in a doctor's life after being challenged to do so. A medical student herself, and having done more or less work in that line before her marriage, she is familiar with the daily happenings that occur in medical practice, and she has reproduced these by word pictures that would fit into experiences we have all had and which touch most of us more or less intimately.

Doctor Serocold (a name which to us has a very suggestive sound in this day of serums and vaccines) strikes us as a fine example of the old-fashioned general practitioner. He has gone through the fine idealism of his first days of practice, perhaps, but he has not lost the touch of the true doctor who wants to do what he can for the comfort and protection of his patients beyond any consideration of his own remuneration. In the words of one of his patients: "Of course we couldn't do without you,

Dr. Serocold. Think, you've been here as long as most of us can remember! You know everything about us. We don't have to explain our bodies or our minds to you. We don't need to tell you how old we are, or how poor, or how worried; you've heard it all years before. We just come to you whenever there's anything wrong; we know that you'll help us if you can, and that if there's no help, at any rate you'll understand. You've been through all our troubles with us." His long years of practice, seeing similar conditions repeatedly, have made him keen as a diagnostician and decisive in manner, yet withal he has learned the value of the human-interest side of the patient, and he is painstaking in his efforts to make life in general less burdensome for those who come to him for their bodily ills. He knows their problems both inside and outside the home, and in his own way he attempts to help them to a solution of their many problems although he himself may be weary to the point of exhaustion, and more or less concerned about his own health and what may be in store for him. But he gives of himself unreservedly, without stopping to count the cost. True, he sometimes wonders just what he has accomplished, and whether he has been a failure after all—but we all are inclined to do that when we indulge in retrospect, at least the editor finds himself doing so and no doubt many others have done so, especially as we grow older and have a little more time in which to contemplate what has happened and what is happening in medicine. Have we not all sat at the bedside of an older practitioner and personal friend who had finished his work, as Dr. Gaunt had done, filled with the same thoughts that occupied Dr. Serocold as he kept vigil beside his old friend and medical sponsor.

Jean Gordan, the young medical assistant, brings a note of fresh interest. Her medical zeal, her zest for life and experience, and her fresh young strength bring interest and delight into Dr. Serocold's otherwise burdensome day. He recalls his own early experiences, his cocksureness and his self-reliance with a bit of a smile, and yet saddened by the knowledge that some day this young woman will find the road bitter and hard, after experiencing some of the knocks and discouragements that are bound to come to her if she follows the medical work.

There are other personalities and other types portrayed with clarity and understanding, all met with in the day's work: The old chemist, whose shop has lost its prestige with the years;

the ex-soldier, crippled by the war but helped to a self-supporting state through Dr. Serocold's interests; the old woman with a penchant for keeping animals; Miss Archibald, trying to busy herself with various occupations to fill a life devoid of human interest; the vicar, Mr. Carmichael, coming across from his garden to take the half-past ten service and a bit dissatisfied with the results of his own life's work, apparently; General Meredith and Martha Purefoy; Little Jenkins and his reactionary views concerning preventive measures as applied to school children; Dr. Jevons, the up-and-coming young medical man who is proving to be a serious competitor, and who seems to have all the earmarks of the businesslike medical man who is inclined to treat the practice of medicine more as a business than as a profession and has no qualms about the methods he employs to insure his own success; Emily Unwin and her problems, affecting Dr. Serocold to a degree and yet all going on as a part of the general pattern of life and without any outstanding manifestations; Lady Catterick, caricaturized to some extent, perhaps, yet easily recognized as a type occasionally met up with, especially by the neurologist, with all the family complications resulting therefrom. The editor is leaving our readers to meet these characters in proper order on reading the book, and ventures to say that those of you who take the time to read it will feel repaid for the time spent in living this day through with Dr. Serocold.

PAYROLL BANDITRY

This is one of the numerous crimes that is evidently so captivating that bandits can hardly keep away from it. Bandits usually do not care where the fault lies, so long as they secure what they are after; the shooting or killing, perhaps both, of several members of the community or city means nothing to him, for his main object is to get control of the payroll and make his escape.

The editor sometimes wonders why more care is not exercised in sending out these large sums of money for payrolls. They are usually in charge of young fellows who have no means of protecting themselves. In our opinion it is outrageous to subject a young fellow to such responsibilities as he is forced to take upon himself in some instances in delivering a payroll over a distance of blocks or even miles, affording an open way for bandits to attack him.

As long as this form of banditry is successful new forms of it will come up, and some poor unfortunate man or boy will be the victim of the bandit. The latter does not hesitate. He gets the payroll, for that is his business and we know from the newspaper accounts that this is a common occurrence, and especially on country roads or in small towns or banks.

We believe if a few of the officers of the banks or business houses were sent out with the payroll boys and subjected to the same dangers the payroll business would stop and other methods would be employed, because an officer of the bank would not expose his precious person and risk his life, particularly when he is needed so badly to count the money in his bank.

This payroll banditry is a good deal like some forms of disease. It spreads over the country like wildfire and skips from town to town just like the old-fashioned diphtheria and other contagious and dread diseases of childhood which exist. But if the same determined effort is made to stamp this out as has been made against contagious disease of all kinds, this form of industry (for it has now grown to be an industry) would be less profitable, to say the least. Sending out influential people with the young men or women acting as regular carriers of the payrolls would cause more pressure to be brought to bear in the apprehending of these bandits, and they might be brought to justice more speedily than they are at present. Fortunately in Minnesota we have had some good results and the bandits have fallen by the wayside or have been captured by a coterie of farmers or business men before they got away; and with the smaller banks and institutions using better methods of protection, the chances are ten to one that the bandits will be shot, too, before they get away. But it should be made a rule that these men who carry payrolls are to be better protected. Small boys are frequently found to be deliverers of large sums, especially in the smaller cities. The employers of these young people, of course, have the excuse that immature boys look small to the bandit and he does not suspect them of being entrusted with the work of carrying large sums of money.

USE YOUR BRAIN

Medicine has come to such a pass that we do not know at the present writing just how it is all coming out. It is in a state of chaos, and apparently this is because each man treats every-

thing he sees or can get hold of, without any consideration of whether it is along his own special line or not.

For instance, the editor of THE JOURNAL-LANCET now has a nervous man as a patient in his hospital who has been here for treatment on five previous occasions within the past few years and each time he has been treated by a surgeon for his alcoholism (until the last time, when he was brought to the writer) with the result that as soon as he was over his acute intoxication he was permitted to get up and go home and continue his drinking because the practitioner who had him in charge was a little leery of detaining him. These cases need special attention and treatment for their trouble, as in other forms of illness, but evidently it is the practice now for medical men to take whatever comes to them and hang on to it.

Of course, eventually things will right themselves but it may take some time. But when this change for the better comes each man who has studied a specialty in medicine will get back his own practice. This will probably not mean much to the older men in medicine, for naturally we are having a large number of medical students graduated; and they will fill the gaps in the ranks caused by the death of some of the older men who go along naturally but eventually die off.

"THE YOUNG CRIPPLE"

This article is taken from *Hygiea*, the health magazine, for May, in which Frank D. Dixon says there are between 300,000 and 400,000 crippled children in this country below the age of fifteen, and he says at least 50 per cent of this crippling might have been prevented. In other words, nearly 200,000 need never have been crippled, while a portion of the remainder, at least, may have been aided. But if you look on the other side of it, you will find that people generally take *Hygiea* or other health magazines and are more informed than we give them credit for being. It is the function of the school to pass on to the next generation the information that the previous generation have acquired, and also the causes of crippling—but so far no one has attempted to present the subject in detail.

The common deformities from which children suffer may be divided into three classes. The first of these three is congenital deformities which consist of such handicaps as club foot, club hand, hare lip, cleft palate, and congenital

dislocation of the bones, usually of the thigh. Most of these defects are easily corrected if taken care of at once, but how many of us see a cripple who has been crippled for years before he seeks the advice of a medical man for relief.

Another large cause of crippling is rickets, and the supposition is that every practicing physician knows something about rickets. Whether he does or not has not been very well demonstrated. If each one of us would remember that rickets are largely due to a deficient supply of calcium in food and supply food or tablets containing lime sufficient for the bones, such children could be saved from crippling due to this cause. Or perhaps they may not be getting enough sunlight to "fix" the calcium. To quote further from *Hygiea*, a recent study made by the Children's Bureau of Porto Rico, where the sunlight is intense and the children wear little clothing in the early years, showed only one child out of 600 having rickets; and this one child had lived in a cellar. Mothers should nurse their babies and should give to children in winter three teaspoonfuls of codliver oil a day, in the opinion of the author of the article quoted, and get them out in the sunlight as much as possible. They would find under those conditions rickets would practically disappear.

Another common cause of crippling is tuberculosis of the bone. This, of course, is a disease that comes from unhygienic living and lack of sunlight; and think how little, practically, is done for our tuberculous children or those who are likely to develop tuberculosis. Part of it, of course, is due to the milk of tuberculous cows—another removable cause. But many farmers are not very eager to give up a good-looking cow, even though its milk is contaminated by tuberculosis, unless he is forced to do so by the health commissioner. The average herd can be investigated or tested for tuberculosis at a comparatively low cost, and there is no reason why it should not be done under state authority, that is, if the farmers will cooperate.

One of the other impressive diseases is infantile paralysis, which causes about 40 per cent of the crippling. There is a great deal yet to learn about infantile paralysis as well as influenza. Some man comes out with a statement that he has discovered a wonderful remedy for infantile paralysis or influenza, and as a matter of fact he has not discovered anything. But in spite of the probable crippling from infantile paralysis or meningitis these people can be looked

after and helped if taken care of at once, but even that requires further education of the people. If the proper precautions are taken the majority of cases of paralysis may be prevented and if care is given immediately the more serious results will be avoided.

A third class of cripples are those handicapped by accident and their number might be cut down if the automobile drivers would exercise more care and the workers in various industries, such as steel workers, etc., could be better looked after. Now the schools have taken up the education of the people for the preventing of speeding automobiles passing schools just as the children are being dismissed, but it is still more or less of an experiment.

Oftentimes a hundred or more children who are crippled will be brought in from a well-populated county. Some of these may be hopeless or nearly so because they have been left too long, or perhaps they are mental cases. Some can be easily helped, and at little cost, while others will require long and expensive treatment with a dubious result, if any. Any crippled child, that is, any child that has been recently crippled, should be sent to a well managed hospital where he can have the best of care and under those circumstances in many instances he can be turned out in good order, and at least very much relieved of his helplessness. It is best in caring for a child like this, after he has recovered sufficiently, to put him in a convalescent home or hospital,—but can you see the mother or the father of a crippled child who has gone through hospitalization for three or four weeks, or perhaps months, taking him to a convalescent home? Not many will do so, yet it would be to their child's best interests in many instances to do so when so advised by their physician.

Of course, children who are crippled are not able to make a living as unskilled laborers, so it is important that they be given as much education as possible. But after the child has reached the age of fifteen or sixteen there should be vocational training, working toward gainful occupation. Unfortunately there are not many people who would submit even to the orders of competent physicians and surgeons.

THE KIDNEY SYMPOSIUM

The symposium now being held at the University of Minnesota on "The Kidney in Health and Disease," has brought to the campus some

of the world's greatest scientists and leaders in the field of research on the kidney. Some of the foreign men who are taking part are Professor F. Volhard, of Frankfort-on-the-Main, Germany; Dr. Paul B. Rehberg, University of Copenhagen; Professor I. Srapper, Amsterdam, Holland; and Dr. Walter De M. Scriver, Royal Victoria Hospital and McGill University, Montreal, Canada, together with members of the A. M. A., members of the faculty of our own University, and of the Mayo Foundation, Rochester.

The anatomy, pathology, physiology and biochemistry of the kidney are being presented in great detail and all the latest research is being correlated with the present knowledge of the kidney. The clinical aspects of kidney diseases are also being presented in a series of clinics by these eminent specialists in this field.

The University of Minnesota is to be congratulated on bringing to the doctors of the Northwest this valuable symposium and contribution to the knowledge of kidney functions and diseases. That it is appreciated is attested by the large number of physicians who are attending the sessions.

FEAR OF THE INACTIVITIES OF THE PUBLIC

This statement is made purely from a theoretical point of view and may not mean much of anything, but the doctors throughout this part of the country as well as over the entire United States, and I am told over the whole world, are having a hard time making or meeting expenses, and they wonder what they are going to do. Fortunately some man steps out once in a while and tells them that better times will be here very soon and he tells them that too many professional men withhold the right kind of information, and many are inclined to be reticent and pessimistic—too much so. There is no reason for it. Of course, it is a well known fact that the farmer has to depend upon his crop and if he has not sufficient crop or sufficient price for the crop he does feel a little strain which makes him wonder how he can employ and pay a doctor. The result is that a great many doctors have been employed but not paid. But they probably will be before he gets very far away.

But all this tends to spread a depression; too many men and women become common gossips, predicting all sorts of failures by their talk about conditions; where if they would keep their

mouths closed or at least emit an occasional optimistic view of the whole situation they would help everyone and themselves more than they might expect. There is no need for this speculation as to where we are going to end. We, who have chosen the medical profession, can't be expected to end, as many business men, with something stored away, because the majority of physicians are good spenders but poor collectors. They frequently wait too long before the bill is presented, whereas if presented early they might get something on account, at least on the installment plan. Many doctors and clinics now have adopted the installment plan of making payments and the patient seems to like the method. If a large bill for medical services exists why not make the suggestion of \$10 per week or even \$10 per month according to the circumstances, which would be looked into, of course. So why not be happy even if we are a little poorer?

DR. ARTHUR A. LAW.

The editor of the JOURNAL-LANCET has a very warm spot in his heart for Dr. A. A. Law, for the latter was one of his students while he was a professor of Nervous and Mental Diseases at the University of Minnesota Medical School.

Dr. Law was born at Harvard, Illinois, April 16, 1872, which made him at the time of his death fifty-eight years old. He was taken sick about two months ago, and on the evening of July ninth he became critically ill and died that night. The editor's opinion, of course, is not worth very much in such an instance, but he would say, if called upon, that Dr. Law worked too hard, although he took time to care for himself. But he was a conscientious, hard-working surgeon, and when he had a case on hand he looked after it with great care and consequently became worn out by the anxiety and excitement incidental to his career as surgeon. This may seem an irrational statement to those who did not know him intimately, but the editor knew Dr. Law very well and although he may have had other complications this was the starting point of his decline.

The educational experience of Dr. Law was really great. He graduated from the Shattuck Military School in Faribault and then entered the University of Minnesota where he graduated from the Department of Medicine in 1894. Soon after that he began teaching in the University and was associated with Dr. Dunsmoor, in a

very active practice; and anyone who remembers Dr. Dunsmoor could easily understand that Dr. Law was associated with a fast worker.

Serving with distinction in the Spanish war and in the Philippine insurrection, Dr. Law was also prominent in his service during the World War, thus serving in three wars. He was one of the founders of the Minnesota Academy of Medicine, and a member of various medical societies. His practice was a very good one, and he did his work wonderfully well.

In 1899 Dr. Law married Helen Elizabeth Lougee, daughter of the late Dr. Charles D. Lougee, who survives him; he is also survived by two daughters, both married and living in Minneapolis, namely, Mrs. James G. Fullerton Jr., and Mrs. John M. Webb, both fine women, and also by his mother, Mrs. Eva Ayer Law, of Tacoma, Washington.

The burial services were held Friday afternoon, July eleventh, from St. Mark's Church, and the private burial service was held at Lakewood Cemetery.

Dr. Law will be greatly missed by a large circle of friends.

NEWS ITEMS

Dr. John V. Carroll, Great Falls, Mont., died recently at the age of 76 years.

Dr. H. D. Wood, Minneapolis, was seriously injured, his chest being crushed, in an auto accident.

Dr. N. L. Leven, Minneapolis, was married this month to Miss Dorothy Barck of Albert Lea, Minn.

Dr. H. K. Kent, Powers Lake, N. D., has moved to Forman and taken over the practice of Dr. R. W. Allen.

Dr. W. E. Dickinson, Canistota, S. D., has recently moved to Letcher, S. D., where he will continue his practice.

Dr. R. A. Buchanan, Wessington Springs, S. D., has moved to Huron, S. D., where he will continue general practice.

Dr. J. O. Lee, formerly located at Canton, S. D., has moved to Woonsocket, and opened offices for general practice.

Drs. J. T. Lapierre, and Leo Murphy, Minneapolis, are back in their offices after a four months absence in Europe.

Dr. Josephine Tofte, Dawson, Minn., has again opened offices in Minneapolis, after spending several months in Florida.

Mr. W. T. Noonan, Oakes, N. D., has made a donation of \$40,000 to erect a hospital in that city as a memorial to his mother.

Dr. R. R. Heim, Minneapolis, was recently elected Commander of the Veterans of Foreign Wars Association, of Minnesota.

Dr. E. Erickson, St. Paul, has moved to Garretson, S. D., and will be associated with Dr. F. C. DeVall, in his general practice.

Dr. B. M. Randall, Graceville, Minn., passed away recently in that city. He was a graduate of Rush Medical College, Chicago.

Dr. A. E. Johnson, Red Wing, Minn., is making a six weeks trip to South America, and most of the distance will be covered by airplane.

Dr. R. V. Rogers, medical officer of the Turtle Mountain Agency at Belcourt, N. D., has been transferred to the Crow Wing Agency, Montana.

Dr. J. E. Campbell and family, South St. Paul, are making a three months trip in Europe, most of the time being spent in the cities of Germany.

Dr. B. J. Branton, Willmar, Minn., was elected president of the Minnesota State Elks Association at the annual meeting held at Bemidji, last month.

Dr. D. G. Colp, Robbinsdale, Minn., has left for a three months trip in Europe. He will spend six weeks in Vienna and Berlin at post-graduate study.

Dr. James Kingston, Grand Rapids, Minn., who graduated from the University of Minnesota this year, will be associated with Dr. M. M. Hursh, of that city.

Dr. M. L. Samms, who has been located in Washington, D. C., for the past two years, has returned to Fargo, where he plans to again resume active practice.

Dr. H. T. Hillstrom, University of Minnesota, has been named head of the Department of Roentgenology and Radio-therapy at Vanderbilt University, Nashville, Tenn.

Dr. William C. White, Washington, D. C., the noted research worker of the National Tuberculosis Association, spent a few days at the Glen Lake Sanatorium this month.

Dr. M. W. Larson, Canton, S. D., has purchased the practice of the late Dr. N. A. Bright,

at White Lake, who was recently killed in an auto accident the day after his marriage.

Dr. C. J. Watson, Minot, N. D., will leave next month for a two year European trip. He is to take a course of special work at Munich. Mrs. Watson will accompany him on the trip.

Another new building is to be added to the sanatorium at Nopeming, Minn., at a cost of \$116,000. Work is to be started at once in order to have it completed early this fall.

Dr. and Mrs. S. M. Hopf, Yankton, S. D., just escaped a very serious accident when their auto was overturned throwing them into a deep ditch. Both were taken to a hospital for treatment.

Dr. Arthur A. Law, prominent Minneapolis physician and surgeon and active in medical organizations throughout the country, died at his residence on July 9, at the age of 58 years.

Dr. Hilding Berglund, head of the department of medicine at the University of Minnesota, was among the leading speakers at the Montana Medical Meeting held at Butte, this month.

Dr. R. W. Allen, Forman, N. D., has been named head of the Bureau of Preventable Diseases in the state health department of North Dakota. Dr. Allen took over the work on July 1st.

The monthly meeting of the Black Hills, S. D., Medical Society brought out about forty of its members, who had a very enjoyable session. Dr. J. L. Stewart is president, and Dr. R. E. Jernstrom, secretary.

Dr. and Mrs. M. J. Shapiro, Minneapolis have recently returned from several months travel in Europe, most of the time being spent in the leading medical centers in Germany, Austria and England.

The sixty-second annual meeting of the Wabasha County Medical Society was held last week at Wabasha, Minn. Addresses were made by Drs. Frost, Bayley, Walters, Collins and Mr. F. M. Brist, attorney of St. Paul.

Dr. John H. Peck, Des Moines, Iowa, president of the Iowa State Medical Association, was among the leading speakers at the annual meeting of the Minnesota association at Duluth. His subject was "Trends of Modern Medicine."

The Southern Minnesota Medical Society will present a gold medal for the finest scientific exhibit at the Duluth meeting this week. A large

list of entries have been made, as it will create an individual research, especially among the younger physicians of the state.

We are fortunate in obtaining for this issue an article on burns describing the most modern treatment with tannic acid which is attracting wide-spread interest. The author, Dr. Christopher, is well known in connection with his well known textbook on minor surgery.

Dr. E. Starr Judd, Rochester, Minn., was elected president of the American Medical Association at the Detroit convention last month. Dr. Judd is a University of Minnesota graduate and a native of Rochester. Over 1,000 men and women extended him a reception on his return from the annual meeting.

Eighteen names of physicians in the United States have been proposed for Affiliate Fellowship and approved by the Council of Scientific Assembly of the A. M. A., of which seven are from Minnesota. Dr. Herbert Davis, St. Paul; Dr. G. Deziel, Minneapolis; Dr. Geo. McIntyre, Minneapolis; Dr. Jennette McLaren, St. Paul; Dr. H. S. Nelson, Minneapolis; Dr. W. C. Portman, Jackson; Dr. W. H. Robilliard, Faribault.

Nine men and one woman were given licenses to practice medicine in North Dakota by the State Board of Medical Examiners as reported by Secretary G. M. Williamson, M.D. They are: Victor S. Quale, of Grand Forks; William A. Stafne and Carl E. Elofson, Fargo; Kellog F. Bascom, Minot; Leonard J. Bowman, Hope; Justin L. Conrad and Fred C. Winn, Jamestown; Dwight R. Knapp, Ambrose; Robert Goodman, Powers Lake and Mrs. Alcinea E. Hall-Kent, Foreman.

Mrs. Lanra Gloeser, St. Paul, the first vitiating nurse, and dean of the social workers of that city, died last month at the age of 81 years, at the Miller Hospital. She had devoted over fifty years in aiding the poor and needy of St. Paul.

Twenty-three former presidents of the Minnesota State Medical Society were honored guests at the society's sixty-second annual meeting held at Duluth this week. Dr. C. F. McComb, Duluth, was the oldest living president, as he served during the year 1894.

The Montana State Medical Meeting held at Butte, this month, was one of the largest and very best held since it was first organized. The program was one that reflected great credit on the committees in charge. Officers elected for

the coming year were: President, Dr. J. H. Garberson, Miles City; vice president, Dr. J. R. R. Sievers, Butte; secretary-treasurer, Dr. E. G. Balsam, Billings; Dr. J. A. Evert, Glendive; Dr. E. A. Wellden, Lewistown; Dr. R. A. Merrell, Sydney, and Dr. A. A. Husser, Havre, Councilors. The next meeting will be held July 19, 1931, at Bozeman.

Dr. James Grassick, Grand Forks, the pioneer and well known North Dakota physician, was given a testimonial dinner this month by his many friends scattered all over the state. Dr. Grassick has been in active practice for nearly fifty years, coming to the state in the early eighties, after graduating from the University of Michigan and the Rush Medical School in Chicago. He was one of the organizers of the State Medical Society, and has held many of the prominent offices of the association. Many loving tributes were paid the doctor at the banquet by the long list of his many friends in the profession and business circles of the state. Dr. Grassick has just passed his eightieth birthday.

Dr. Clarence M. Jackson, director of the Institute of Anatomy at the University of Minnesota, and Dr. Richard E. Scammon, professor of Anatomy at the University, have been honored by the selection of a symposium to which they contributed as the August "book of the month" by the Scientific Book Club. The book is *The Measurement of Man*, a study in biometrics which will be published by the University of Minnesota Press early in August. The late Dr. J. Arthur Harris, who was head of the Minnesota Botany Department, and Dr. Donald G. Paterson, professor of Psychology, are the other authors contributing to the volume, which is the first Minnesota book to be selected as a "book of the month" by any book club. The essays in this symposium were originally lectures delivered at the university under the auspices of Sigma Xi.

CLASSIFIED ADVERTISEMENTS

For Sale

Well established general practice with residence in South Minneapolis. Leaving for West. Address 726, care of this office.

Office for Rent

Excellent location for physician and dentist in modern fireproof building. Rent very reasonable. W. D. Kregel, 2180 Marshall Ave., St. Paul, Minn.

Doctor, Attention!

Doctor, let us sell your practice, find suitable associate, assistant, location, or position for you. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Locum Tenens Work Wanted

Physician, age 28, available for summer or any part of it. Graduate of grade A medical school with general internship at Ancker Hospital, St. Paul. Address 736, care of this office.

Practice for Sale

In North Dakota, County Seat. A \$14,000 cash practice and complete office equipment that cost \$6,000 will sell for \$5,000 cash. Will introduce. Opposition very light. Reason for selling, am going to Europe. No better location anywhere. Address 737, care of this office.

Registered Technician Available

Position desired by registered technician, experienced in X-ray, laboratory, physiotherapy and metabolism. Can also assist in minor surgery and anesthesias. Excellent bookkeeper. Thoroughly qualified and efficient. Prefer clinic appointment. Excellent references. Address 735, care of this office.

Location Wanted

Physician, 35, married, gentle, speaks German, wishes connection with surgeon or obstetrician. Would consider salary basis for the time being. Only strictly ethical proposition can be considered. Address 742, care of this office.

For Sale or Lease

Extensive practice in North Dakota county seat. Unopposed, large territory, good crops, collections good, good roads. Entering special training for one year. Will sell or lease modern residence partly

furnished, and complete office equipment for reasonable rent. Married physician and Scandinavian preferred. Available anytime up to September first. Address 743, care of this office.

(Continued from page 334)

Milk Survey in North Dakota Under Way

At President Hoover's direction, there has been organized a White House Conference on Child Health and Protection, and one of the important problems assigned to this Conference is the study of milk production and control. One of the most important subdivisions of this problem is the determination of the present status of milk sanitation throughout the United States, by means of surveys of a representative number of both large and small American communities.

The State Department of Health has taken this opportunity to secure the assistance of the White House Conference. Dr. F. A. Clark, Associate Milk Inspector of the United States Public Health Service, has been assigned to this state to cooperate with the State Sanitary Engineer in conducting the survey, covering approximately 20 North Dakota towns and cities. It will consist chiefly in the inspection of dairies and pasteurization plants, and each city will be furnished with copies of its own ratings together with those of the rest of the state and United States.

Accidental Deaths in North Dakota

Figures for 1929 again show home accidents causing the largest number of accidental deaths in North Dakota. Of the total 352 accidental deaths, 103 were due to falls, burns, scalds or cuts occurring in the home. Motor vehicles caused the second largest number of fatal accidents with a total of 101. More thought should be given to the prevention of such loss of life.

Inspection Trips

Owing to the small amount of travel money allowed in our budget it will be impossible for members of our staff to make inspection trips except in cases of severe epidemics or emergency cases, unless transportation is furnished.

DOCTOR--Are You Paid for Your Work?

We present a new book based upon the author's fifteen years association with the Practice of Medicine. It is a professional and financial asset to every physician. Its title is:

MEDICAL SERVICE—Its Relation to Collections—How to Collect

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THE JOURNAL-LANCET

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TRANSACTIONS OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION—1930

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JOHN CRAWFORD, M.D. New Rockford

ALTERNATE DELEGATE TO THE A. M. A.

A. W. SKELSEY, M.D. Fargo

COUNCILORS

FIRST DISTRICT

MURDOCK MacGREGOR, M.D., 1929. Fargo

SECOND DISTRICT

G. F. DREW, M.D., 1928. Devils Lake

THIRD DISTRICT

G. M. WILLIAMSON, M.D., 1929. Grand Forks

FOURTH DISTRICT

E. M. RANSOM, M.D., 1930. Minot

FIFTH DISTRICT

F. L. WICKS, M.D., 1931. Valley City

SIXTH DISTRICT

N. O. RAMSTAD, M.D., 1929. Bismarck

SEVENTH DISTRICT

P. G. ARZT, M.D., 1927. Jamestown

EIGHTH DISTRICT

L. B. GREENE, M.D., 1928. Edgeley

NINTH DISTRICT

J. J. SEIBEL, M.D., 1933. Harvey

TENTH DISTRICT

J. W. BOWEN, M.D., 1928. Dickinson

HOUSE OF DELEGATES

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H. B. HUNTLEY, M.D. Leonard

DEVILS LAKE DISTRICT SOCIETY

R. H. BEEK, M.D. Lakota

GRAND FORKS DISTRICT SOCIETY

J. H. MOORE, M.D. Grand Forks

C. J. GLASPEL, M.D. Grafton

KOTANA COUNTY SOCIETY

I. S. ABPLANALP, M.D. Williston

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A. R. SORENSON, M.D. Minot

RICHLAND COUNTY SOCIETY

BENJ. THANE, M.D. Wahpeton

SHEYENNE VALLEY SOCIETY

E. A. PRAY, M.D. Valley City
S. A. ZIMMERMAN, M.D. (Alternate) Valley City

STARK COUNTY SOCIETY

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R. B. RADL, M.D. (Alternate) Dickinson

SIXTH DISTRICT SOCIETY

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H. A. BRANDES, M.D. Bismarck

SOUTHERN DISTRICT SOCIETY

L. B. GREENE, M.D. Edgeley
F. W. FERGUSON, M.D. Kulm

TRILCOUNTY SOCIETY

A. E. DONKER, M.D. Carrington
R. J. CRITCHFIELD, M.D. Fessenden

TRAILL-STEELE COUNTY SOCIETY

SYVER VINJE, M.D. Hillsboro

SOUTHWESTERN DISTRICT SOCIETY

D. LEMIEUX, M.D. Bowman

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PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE FORTY-THIRD ANNUAL SESSION OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION

MONDAY, May 26, 1930

The first meeting of the House of Delegates was held in the rooms of the Association of Commerce, Bismarck, North Dakota, and was called to order at 8:30 p. m., by the President, Dr. John Crawford, New Rockford.

ROLL CALL:

The Secretary called the roll and the following delegates, councilors and officers responded:

- Andrew Carr, Sr., M.D., Minot.
- Paul H. Burton, M.D., Fargo.
- William W. Wood, M.D., Jamestown.
- Murdock MacGregor, M.D., Fargo.
- G. F. Drew, M.D., Devils Lake.
- George M. Williamson, M.D., Grand Forks.
- E. M. Ransom, M.D., Minot.
- F. L. Wicks, M.D., Valley City.
- N. Oliver Ramstad, M.D., Bismarck.
- P. G. Arzt, M.D., Jamestown.
- L. B. Greene, M.D., Edgeley.
- J. W. Bowen, M.D., Dickinson.
- B. K. Kilbourne, M.D., Fargo.
- W. F. Baillie, M.D., Fargo.
- H. B. Huntley, M.D., Leonard.
- C. E. Stackhouse, M.D., Bismarck.
- H. E. Brandes, M.D., Bismarck.
- A. E. Spear, M.D., Dickinson.
- W. F. Sihler, M.D., Devils Lake.
- F. O. Woodward, M.D., Jamestown.
- J. J. Seibel, M.D., Harvey (acting).

A. R. Sorenson, M.D., Minot.
 E. A. Pray, M.D., Valley City.
 W. C. Fawcett, M.D., Starkweather.
 V. J. LaRose, M.D., Bismarck.
 James Grassick, M.D., Grand Forks.
 A. A. Whittemore, M.D., Bismarck.
 L. W. Larson, M.D., Bismarck.
 E. P. Quain, M.D., Bismarck.
 W. H. Long, M.D., Fargo.
 A. D. McCannel, M.D., Minot.
 President Crawford and Acting Secretary
 MacLachlan.

The President declared a quorum present and the House duly constituted for the transaction of business.

THE PRESIDENT: We are honored by having with us some distinguished gentlemen from South Dakota and I will ask Dr. Ramstad to introduce them to us.

Dr. Ramstad introduced the following delegates from the South Dakota State Medical Association:

Dr. W. A. Bates, Aberdeen.
 Dr. M. C. Johnston, Aberdeen.
 Dr. E. A. Pittinger, Aberdeen.
 Dr. Percy T. Peabody, Webster.
 Dr. J. F. D. Cook, Langford.

DR. J. F. D. COOK: Mr. President, Gentlemen: It is a pleasure to meet with you as a fraternal delegation from your sister state, the South Dakota State Medical Association.

In 1882 there met at the village of Milbank a group of medical men from the Territory of Dakota. These gentlemen, having recognized in southern portions of the territory of Dakota the need of a board to regulate the practice of medicine in the territorial limit, met from time to time in annual session with very great success in formulating laws for the territory of Dakota, and they enacted with the governor some laws controlling the treatment of disease.

In 1889 an operation was performed on the territory and out of that came North and South Dakota. Which is the elder I understand cannot be decided.

As secretary of the Medical Association of South Dakota I proposed that our fiftieth anniversary should be held next year, and it was the unanimous vote of the House of Delegates that we should hold our golden anniversary in Aberdeen in 1931, and that we should invite our sister state association to meet with us in joint session. Our President, Dr. Peabody, will now tell you something about our plans.

DR. PERCY T. PEABODY: I wish first to thank the president of your society for the introduction of this delegation.

I wish to emphasize what Dr. Cook has said in regard to our desire to have the North Dakota State Medical Association meet with us next year at our golden anniversary. I will ask Dr. Johnston, who is chairman of this delegation, to give you the details.

DR. M. C. JOHNSTON: I am from Aberdeen and the Aberdeen Medical Society invites you very cordially to meet with us. We will do our best to entertain you if you decide to come. This delegation represents the State Medical Association, having been appointed at our meeting in Sioux Falls to invite you. As you know, Aberdeen is the most central point that could be selected. There are good gravel roads in all directions and it is not as far from some of your North Dakota cities as are some cities in your own state. We think it is the most easily reached of any city large enough to entertain such a convention.

If the officers of the two organizations work together I think we should be able to produce a good scientific program and we are able to take care of the meeting in every other way. Every man in our District Society is behind this invitation and they will do all they can to make the meeting a success. We do not get together often enough to get acquainted and living in such close association we should know each other better.

We hope you will consider this proposition favorably and we shall be glad to take the word back that you have decided to come. We want it understood that you would have just as much to do with the program as if you were meeting in your own state, and you would, of course, be provided with a place for the meeting of your House of Delegates and the transaction of your business affairs.

THE PRESIDENT: I think the delegation was well chosen and on behalf of the Association I hope the gentlemen will stay and join in our meeting here, and if there is any entertainment afterward that they will be present there as well.

DR. E. P. QUAIN: I returned from the meeting of the South Dakota State Medical Association recently and was so impressed with the personnel of the organization, the program and the entertainment features, that I am much in favor of this joint meeting next year.

I move that the President appoint a committee from this Association to consider the matter with

the fraternal delegates from South Dakota as to the details of the proposed meeting.

Motion seconded by Dr. Williamson and unanimously carried.

The President appointed the following as a committee to confer with the fraternal delegates from South Dakota at the close of the meeting of the House of Delegates:

- Dr. E. P. Quain, Bismarck.
- Dr. George M. Williamsón, Grand Forks.
- Dr. W. F. Sihler, Devils Lake.
- Dr. William W. Wood, Jamestown.
- Dr. William H. Long, Fargo.
- Dr. A. D. McCannel, Minot.

MINUTES

Dr. MacLachlan moved that the minutes of the last annual session be adopted as they appeared in the JOURNAL-LANCET, and that the reading of minutes be dispensed with.

Motion seconded and unanimously carried.

REPORT OF THE SECRETARY

The Acting Secretary, Dr. Charles MacLachlan, presented the following report:

The Association's roster of membership is the indicator or barometer registering before the public and the profession the interest of organized medicine in the maintenance of its ideals in that particular locality.

Societies reporting same membership as last year: Cass 62, and Sheyenne 19.

Societies reporting gain: Stark County 1.

Societies reporting loss: Devils Lake 4; Northwestern 4; Southwestern 5; Richland County 2; Stutsman 5; Traill-Steele 1; Kotana 1; Sixth District 2; Grand Forks 1; Tri-County 5.

Total membership, present year, 357, a loss of 39 members, mostly accounted for by old members who still continue their interest in the Local and State Societies, but have been negligent in responding to the local secretaries' notice of dues, and thus find themselves outside the roster of the American Medical Association, a situation which they surely will endeavor to right themselves in, without delay.

Our members should not lose sight of the fact that the State Secretary's roster of members must be complete at the Secretary's office and reported by him to the American Medical Association before April 1st of the current year. In default thereof, the State Association loses its affiliation with the American Medical Association, and is deprived of representation in the House of Delegates of the American Medical Association.

Your local secretary is doing a work of love, and without financial recognition. It distresses him to realize that his society is being placed in a regrettable plight by delaying payment, and they as individuals are losing caste before the medical world.

May we get in step before another year passes, and register 100 per cent of possible membership before the doors are closed against us.

The above list of lost membership also includes the Southern District of ten members, entirely failing to report and as the records show, are without affiliation in any State Unit.

A further regrettable loss is that made by the Grim Reaper, in removing from our councils two grand old men, Henry M. Wheeler, a past president of the Association, and John D. Taylor, a public spirited citizen who represented his city and district in the State Senate, both of whom were honorary members of this Association, and both residents for many years and past mayors of Grand Forks. Our list of honorary members is thus reduced to one, Dr. H. J. Rowe, the octogenarian who served this Association so faithfully as its Secretary for nineteen years, and was its twelfth president.

At the forty-second annual meeting held in Fargo last year, the merits of a Basic Science Law were discussed, and a committee was chosen to prepare a report and recommendations to be discussed at this meeting. Much interest is being manifested in this report.

Several matters of medical importance, national in character, and under discussion in Congress, have been referred to the Secretary's office and by him have been promised careful consideration, and action in our Councils.

One of these is the Jones-Cooper Maternity and Infancy Bill, an extension of the Sheppard-Towner Act. Pamphlets dealing with proposed national legislation of a medical character were distributed nationwide to organize medical units by Dr. Wm. C. Woodward, Director of the Bureau of Legal Medicine and Legislation, Chicago.

Also copies of letters from Secretary Olin West of the American Medical Association to congressional members requesting amendments to a Bill to create in the Treasury Department a Bureau of Narcotics and for other purposes. This literature, including copies of letters sent, will be passed through the president to their proper committees together with an appeal in writing from one of our members against exorbitant charges for electrical power by a locally operating power company for use of its product in x-ray examinations. Also letters to and from our State representatives in Congress on some of the questions of national interest.

Attention is called to an invitation extended to the hospitals of North Dakota that representatives attend the Fourth Annual Convention of the South Dakota Hospital Association to be held at Aberdeen, South Dakota, June 16 and 17.

And, again, apropos of hospital requirements, our attention is called to the possibility of losing our present right to the purchase of tax-free alcohol which only runs until the State legislature convenes in January, next. Prompt and decisive action to guard against this must be instituted.

Your Acting Secretary attended the National Meeting of State Secretaries in Chicago in November, and was rewarded by listening to and taking part in the discussion of a program of varied sub-

jects and of intense interest to organized medicine. When its deliberations were concluded adjournment was taken to witness the Notre-Dame-Southern California football game, none the less enjoyable after two days of serious discussion.

Upon motion regularly seconded and carried this report was accepted as read.

REPORT OF TREASURER

Dr. William W. Wood presented the following report, which was automatically referred to the Council:

TREASURER'S ANNUAL REPORT

June 3, 1929, to May 22, 1930

Assets and Receipts:

Balance Checking Account, June 3, 1929	\$1,976.49	
Savings Account	2,173.11	
Dues from Secretary	1,832.00	
Interest Liberty Bonds	42.50	
Interest Savings Account	35.19	
	<u>\$6,059.29</u>	\$6,059.29

Disbursements:

Checks 206 to 217 inclusive	\$1,905.16	
Except checks No. 218 and No. 220 for vouchers 377 and 378, in amounts of \$5.00 and \$12.00 respectively still uncashed.		
Exchange on Checks	2.70	
	<u>\$1,907.86</u>	\$1,907.86

Balance	\$4,151.43	
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Distribution of Funds at Present Time:

Balance on hand May 22, 1930		
Savings Account includes \$1,000.00		
Liberty Bonds	\$2,250.80	
Checking Account	\$1,900.63	
	<u>\$4,151.43</u>	\$4,151.43

Respectfully submitted,
 WM. W. WOOD, M.D.
 Treasurer

REPORT OF COUNCILORS

FIRST DISTRICT

Dr. Murdock MacGregor, Fargo:

The total membership of the Cass County Medical Society, April 30, 1930, was sixty-three. During the year 1929 the membership of the Society was sixty-three with five associate members from Minnesota.

Seven regular meetings of the Society were held during the year with an average attendance of twenty-nine, and two special meetings were held, one of which was the State Medical Association and the other a two-day symposium on Syphilis and Tuberculosis which was held November 21 and 22.

The number of members of the Society appearing on the regular programs was seven.

During the year one member was convicted in the federal court and removed to Leavenworth and two other members left January, 1930, one Dr. Sverre Oftedal going to Los Angeles to practice and Dr. Eleanor Bohnsack going as a medical missionary to India.

Owing to the discontinuance of the Southern District Society three members from this former Society have been taken into the Cass County Medical Society this past year.

Respectfully submitted,
 M. MACGREGOR, M. D.
 Councilor

SECOND DISTRICT

Dr. G. F. Drew, Devils Lake:

The Devils Lake District Society had three meetings during the year, all well attended. Twice we had an outside speaker which seems to be a good way to create interest, and these two meetings were well appreciated.

Our membership fell off four due to two removals from the state and two have not yet paid up. We have thirty-one members in good standing. We have taken in two new men who recently moved into the district.

In a general way I think our Society is in good condition and with prospects for little change in membership. There are nine non-members, some of whom belong to other districts. We have no more friction than is good for the community and not much business for our censors to handle.

Your fraternal councilor,
 G. F. DREW, M.D.

THIRD DISTRICT

Dr. George M. Williamson, Grand Forks:

The Grand Forks District Medical Society continues to prosper. Regular monthly meetings are held.

There is a membership of fifty-eight. Some men practicing in this District are members of other societies as a matter of convenience.

Through a Committee from this Society a series of Health Talks was arranged. Dean French has been the speaker and given very valuable information over the radio to the public, using language they understand. Much good will surely result. I would suggest that other societies where there is a broadcasting station adopt a similar plan if they have not yet done so.

I would further urge members of all local societies to get busy in the matter of legislation to be brought forward this coming session. Visit with your friends who are before the people seeking the office of Senator or Representative. Have them agree to consult with you as their friend in regard to all matters of legislation pertaining to Public Health and Welfare before committing themselves to any definite policy.

We must get busy at once and keep busy advocating our cause of equal standards for all who practice the healing art. It is only by energetic

action on the part of all members of the regular profession that we can hope to retain the standards we have, and educate the public to recognize an equal standard for all who treat the sick.

G. M. WILLIAMSON, M.D.

FOURTH DISTRICT

Dr. E. M. Ransom, Minot:

During the past year the Northwest District Medical Society continued the practice established three years ago, of holding meetings alternately at St. Joseph's and Trinity Hospitals. These meetings began with a dinner furnished by the hospitals and continued with a program of papers, case reports, clinics, motion pictures, and occasionally a visiting speaker: Certainly, for our society at least, this method of conducting meetings has proven highly successful, and the attendance and enthusiasm has exceeded very appreciably that of the time before this system was adopted. Number of members, 61; dropped for non-payment of dues, 1; left the district, 3; number of deaths, 0; number of meetings, 12.

Respectfully submitted,

E. M. RANSOM, M.D.
Councilor

FIFTH DISTRICT

Dr. F. L. Wicks, Valley City:

Mr. President and Members of the House of Delegates:

The Traill-Steele County Society has held three regular meetings, these being addressed by Drs. Mulligan and Engstad of Grand Forks and Dr. Lewis of Fargo.

Dr. Litman of Hope has removed from the territory to enter Government Service.

Dr. Bowman has located in Hope and has been invited to join.

One member is delinquent for 1930—the paid-up membership is nine.

Dr. A. A. Kjelland of Hatton is President.

Dr. Syver Vinje of Hillsboro is Secretary-Treasurer.

Dr. T. J. Glasscock is the delegate to the Annual Meeting.

The average attendance at the meetings has been eight.

In the Sheyenne Valley Society we have nineteen paid up members.

Our community and profession suffered a loss in the passing of Dr. L. S. Platou who was a member of the Cass County Society.

Dr. Platou was a prominent citizen of city and state.

At the meeting of February 28th to which the Stutsman County Society was invited, Dr. Long, of Fargo, presented a very interesting paper on encephalitis and allied conditions.

At the meeting of May 12th, Dr. Westley, of Cooperstown, was our out-city speaker, presenting many interesting charts in a consideration of mortality statistics.

Case reports were presented by Drs. Campbell, Meredith and Spicer.

Officers elected at our annual meeting, usually held in January, were as follows:

President, Dr. E. A. Pray.

Secretary-Treasurer, Dr. W. H. Moore.

Respectfully submitted,

F. L. WICKS, M.D.
Councilor

SIXTH DISTRICT

Dr. N. Oliver Ramstad, Bismarck:

During the past year the Sixth District Medical Society has held four meetings.

The average attendance was thirty members and six visitors.

We have been favored by an address by Governor George Shafer, and another by Mr. S. S. McDonald, formerly a member of the Workmen's Compensation Bureau. Major John Oswalt of the United States Army gave us an instructive paper describing the medical service in the United States Army.

Our total membership on December 31, 1929, was fifty-six. There have been no deaths among our members during the year. We have gained one new member and have lost two members by the removal of Dr. Aylen, of Mandan, to the state of Washington, and Dr. J. F. Timm, who transferred to the Minot Society.

Our programs have been good and helpful to all members of the organization.

Respectfully submitted,

N. O. RAMSTAD, M.D.
Councilor

SEVENTH DISTRICT

Dr. P. G. Arzt, Jamestown:

I am pleased to report that at present we have eighteen members in our local society in good standing. One of our members, Dr. John F. Turgeson, has moved to Grand Forks but as yet has not demitted.

We have had four splendid meetings during the past year, all of which were well attended by the local doctors as well as visitors from Bismarck, Valley City, Edgeley, and New Rockford.

Our first meeting was held on September 30, at the State Hospital. A "Symposium on Insanity" was very well presented and thoroughly enjoyed by all those attending. After this meeting we enjoyed a splendid luncheon which was appreciated.

On December 16, Dr. A. A. Whittemore of the State Board of Health addressed us on, "Full Time Health Unit." This paper was thoroughly discussed by the members present and all seemed to appreciate the fact that this unit would benefit us greatly but at that time we were, unfortunately, unable to take advantage of the same.

On February 24, we were fortunate to have Dr. John Urner, an associate in Obstetrics and Gynecology deliver to us a splendid paper on, "Carcinoma of the Uterus." We had a splendid attendance at this meeting which was preceded by a dinner at the Trinity Hospital and everyone went away feeling well repaid for their efforts in attending.

On March 31, Dr. William A. O'Brien, assistant professor of Pathology, University of Minnesota, gave a splendid talk on the "Recent Advance in

Medicine." It is needless to say that everyone enjoyed hearing Dr. O'Brien inasmuch as he is a very good speaker and presented his subject in such a way that even a layman would appreciate it.

This meeting was preceded by a dinner at Trinity Hospital and was well attended by outside physicians as well as our local dentists.

Our meetings this year have been very interesting and the attendance has been particularly good. Having a full attendance at these meetings always makes them very much more interesting and more discussion can always be brought out when a crowd is present.

I am very pleased to say that our society is in a flourishing condition. Practically all of the members seem to take great interest in our meetings which is evidenced in the fact that they attend the same.

Faternally yours,

P. G. ARZT, M.D.
Councillor

NINTH DISTRICT

Dr. J. J. Seibel, Harvey:

I herewith present the report of the Tri-County Medical Society for the past year.

On account of bad road conditions and other reasons our society held fewer meetings than formerly. These meetings were held in the different towns in the district. After the routine business, clinical cases were presented and discussed. As a whole there is little friction in our society with the result that we always enjoy our meetings.

Meetings held, four.

Members, nineteen.

New members, 1, Dr. L. J. Alger, of McClusky, N. D.

We had two outside speakers during the year. Dr. A. L. Cameron, of Minot, spoke on "Certain Factors of Interest in the Treatment of Goiter." Dr. Russel Gates spoke on "X-ray in the Diagnosis of the Gastro-Intestinal Conditions." Both of these men are associated with the Northwest Clinic, Minot, N. D.

Respectfully submitted,

J. J. SEIBEL, M.D.
Acting Councillor

TENTH DISTRICT

Dr. J. W. Bowen, Dickinson:

Mr. President, Fellow Councillors, and Members of the House of Delegates:

During the year our Society has passed its 21st birthday, having been organized in 1909. We have nineteen members in good standing, the largest membership in the history of the society. We lost one man, Dr. Crossette, of Richardton, having moved away; and have gained three new members: Dr. Hill, of Regent; Dr. Olesky, of Mott; and Dr. Hetzler, of Richardton. There is only one doctor in our territory who is not a member and his application is now before the committee on credentials.

We have had four regular meetings during the year with interesting programs, followed by a social hour or two. In connection with the programs

the society is indebted to the following: Dr. Paul Giessler, of Minneapolis, and Dr. J. A. Evert, of Glendive. At our last regular meeting a feature of the program was the film "Diagnosis and Treatment of Infections of the Hand."

Our delegates have been instructed to present the following matters for the consideration of the House of Delegates:

First: The amalgamation of the Stark County Medical Society with the Southwestern District Medical Society. This matter has already been taken up at the regular meeting of the Stark County Medical Society and the members present went on record as being unanimously in favor of this union. Our secretary has written to each member of the Southwestern District and over 50 per cent are in favor of it.

Second: We are requesting information as to the geographical boundaries of the territory included in our Medical Society. It seems to us that each society should have its own territory with definite geographical boundaries. If each society is allowed to accept members from another society's territory or each man can join any society he sees fit it is bound to be to the detriment of the smaller societies, which always have a hard time to get along anyway; and in favor of the larger societies. This must eventually result in the disappearance of the small societies, leaving only a few of the stronger societies, which will deprive a large number of men of the benefit of affiliating with a local society.

Third: We believe that the time and expense of obtaining a medical education and the right to practice medicine is sufficient to warrant our demanding some protection. We do not believe any body of men without a medical education should be allowed to dictate to the medical profession the amounts or kind of drugs that should be used in the treatment of their patients. We are informed that the size of the annual allotment of alcoholic medicines allowed each physician in the State of North Dakota was arbitrarily fixed without consulting the needs of the doctors or patients. The Stark County Medical Society wishes to go on record as being in favor of an increase to at least five gallons annually in the amount of alcoholic liquors allowed each physician in the state.

We have had no friction of any kind between the members of our society during the past year but have worked together in perfect harmony and fellowship for the best interests of all the members of our society and of our profession.

Respectfully submitted,

J. W. BOWEN, M.D.
Councillor

Upon motion regularly seconded and carried these reports were accepted as read.

The President read the following invitation which had just been received:

The local Chapter of the Daughters of the American Revolution invite the members of the North Dakota State Medical Association and their ladies to visit the Roosevelt Cabin on the

State Capitol grounds. The cabin will be open from 12:00 o'clock, noon, on Tuesday and from 10:00 A. M. on Wednesday.

REPORTS OF SPECIAL COMMITTEES

COMMITTEE ON TAX-FREE ALCOHOL

Dr. L. W. Larson, Bismarck:

I will report very briefly on this investigation that has been carried on throughout the state. It has been found that it will be necessary to pass a law or amend the present law in such a way that hospitals and teaching institutions will be allowed to buy and have in their possession alcohol, and it should be incorporated that it shall be tax-free.

Recently from Bismarck has been sent a request for all hospital authorities to meet here or at the close of the meeting of the State Nurses Association in Fargo this fall, to consider plans for drawing up a suitable bill. The meeting will probably be held in Fargo and we wish to have the endorsement of the House of Delegates of the State Medical Association.

This matter was discussed by Drs. MacGregor, Larson, Wood, Stackhouse, Williamson, Brandes, and the following resolution was unanimously adopted:

WHEREAS: It has been drawn to the attention of the federal prohibition department that the physicians of North Dakota are seriously handicapped because of the limitation of the state prohibition law, and

WHEREAS: The ruling as it now stands limits the amount and kind of medical spirits to one and one-half gallons of whiskey and three and one-half gallons of alcohol, and

WHEREAS: It has been found that the amount of whiskey allowed under this ruling is inadequate, therefore be it

RESOLVED that this, the House of Delegates of the Forty-Third Annual Session of the North Dakota State Medical Association unanimously request that the physicians of the state of North Dakota holding the necessary federal permits be allowed to withdraw the entire legal quantity in whiskey or any proportion of that legal quantity, as they may so desire. And be it further

RESOLVED that a committee consisting of Dr. Murdock MacGregor, of Fargo, Dr. L. B. Greene, of Edgeley, and Dr. L. W. Larson, of Bismarck, be appointed to present this resolution to the deputy prohibition administrator, Mr. John N. Hagen.

DISTRICT BOUNDARIES

The question of district boundaries referred to in Dr. Bowen's report was introduced by Dr. George M. Williamson and discussed freely by Drs. MacGregor, LaRose, Bowen, Brandes, Wood, Greene and MacLachlan.

Dr. Williamson moved that a committee consisting of Drs. Fawcett, Sorenson, Brandes,

Healy and Spear be appointed to review the question of boundaries and report to the Council.

Motion seconded and unanimously carried.

-REPORTS OF STANDING COMMITTEES

PUBLIC POLICY AND LEGISLATION

Dr. V. J. LaRose, Chairman, presented the following verbal report:

This not being a legislative year we have no formal report. We have sent out letters to the councilors of each district asking them to see that committees were appointed in their society and also to use every means in their power to become acquainted with their legislators and explain to them the legislation that may come up, making it clear that all the profession wants is a fair deal. We hope that the members of each component society will do all they can to interview the members and prospective members of the legislature. We have a large association and if we pull together we will have as much influence as any organization in the state.

The only proposed legislation that has come before the committee is the basic science law and the proposed registration of physicians.

DR. PAUL H. BURTON: My understanding is that the Council constitutes the board of directors of the North Dakota State Medical Association and I believe that during the coming year it would be well for the Council to have a meeting every two or three months to talk over and formulate plans for the advancement of our profession.

Dr. H. H. Healy agreed that something should be done in an educational way for the advancement of organized medicine in North Dakota and expressed himself in favor of drawing on the Association funds for this purpose when necessary.

President Crawford called attention to the health articles published in the newspapers throughout Wisconsin under the auspices of the University of Wisconsin, and expressed the belief that it would be well to arrange to have similar educational propaganda put out through Dr. French of the University of North Dakota.

DR. H. B. HUNTLEY, Leonard: I think the need of stimulation and assistance in the defense of the medical profession against impending legislation is very great.

I move that this House of Delegates recommend to the Council that they shall initiate and carry on a program of public education along the lines suggested by the Committee on Public Policy and Legislation, and that the Council be authorized to draw upon the funds of the Association for this purpose.

Motion seconded by Dr. Healy and unanimously carried.

COMMITTEE ON TUBERCULOSIS

Dr. James Grassick, Chairman, presented the following report:

Your Committee on Tuberculosis reports as follows: The death rate from this disease during the past three decades has made a phenomenal decline, falling from first to sixth place. Although tuberculosis is a communicable disease, and this should be stressed, it takes its greatest toll from the poor, the overworked and the underfed. Your committee is of the opinion that the intensive educational program by national, state and local organizations, emphasizing right living and a better understanding by the masses of the leading facts pertaining to the cause, prevention and care of the disease has been an outstanding factor in its control.

Our legislators have always shown a sympathetic interest in the cause of the tuberculous, and as a result we have at San Haven as fine an institution for their care as can be found anywhere. Apart from the arrests and cures, the continuous segregation of 200 or more active infectors must of necessity have a far reaching influence on the health of the state. The Pavilion, a home for the under-par, exposed child, should save many from becoming victims of the disease. The profession is urged to take an active interest in the Sanatorium and its problems, for it is only by constructive coöperation that the best results can be attained.

The Division of Epidemiology of the State Department of Health is doing good work by making a check of patients discharged from the State Sanatorium, and listing and notifying health officers of reported cases. The reports received during the past two years compare very favorably with the standard of the American Public Health Association, that of two cases (all forms) for one death. In this connection it would appear that a well coördinated field service would be a valuable economic asset. The treatment of tuberculosis is an expensive process at best. A properly equipped, adequately trained and efficiently directed social worker making a survey of homes from which patients come and of those to which they are sent after a sojourn at a sanatorium might be a means of detecting suspects in their incipiency on the one hand and of helping to make adjustment of the returned patient to industrial life on the other. This is a gap in the tuberculosis program that has not as yet been fully filled.

The North Dakota Tuberculosis Association has completed its twenty-first year of service. Its activities as outlined in its literature are familiar to the reading public.

During the past two years its major project has been a demonstration of what can be done for malnourished, underprivileged children, by life in the open under well ordered conditions. The results of the Fresh Air Nutrition camp at Lake Isabel where fifty children during the past summer were cared for were so satisfactory that many insistent

calls for expansion have been received. The camp idea has received the sympathetic and material support of the profession and your Committee believes it to be a worthwhile activity.

During the month of March, 1930, the Association, in coöperation with the State Department of Health, made a survey of the schools at Golden Valley, N. D. Out of 167 children examined, eight were found to be suspects, and recommended as suitable cases for admittance to the Children's Pavilion at San Haven.

The value of such surveys can hardly be over estimated.

Respectfully submitted,
FANNIE DUNN QUAIN, M.D.,
JAMES GRASSICK, M.D.,
Committee.

Dr. MacLachlan moved that this report be adopted. Motion seconded and unanimously carried.

COMMITTEE ON PUBLIC HEALTH

Dr. A. A. Whittemore, Chairman, presented the following report:

Mr. President and Members of the House of Delegates:

Your Committee on Public Health respectfully submit the following annual report for the year ending June 1, 1930:

The general health conditions in the state are satisfactory. No epidemics large enough to attract general attention have occurred. There is noted, however, a considerable increase in the morbidity and mortality reports for diphtheria, smallpox and epidemic meningitis.

In 1929 there were 14,169 births and 5,377 deaths reported. The standard of about 95 per cent registration is still maintained, though at times with difficulty. The new census will have a tendency to lower all rates based on population as there will be shown a marked increase over the population basis used during the latter part of the old census period.

The reporting of communicable diseases has improved to some degree. The United States Public Health Service has established a morbidity registration area. The North Dakota State Health Department has made application for admission as a state unit. The standard required is 75 per cent. The test is now in progress. The present returns show 85 per cent registration with the work two-thirds completed. The Federal standard of 75 per cent registration will be raised rapidly.

The increase in the diphtheria morbidity and mortality reports has caused some stimulation of effort for more complete immunization. Governor Schafer has, at the request of the Health Department, appointed a diphtheria prevention commission, who are planning a vigorous campaign of immunization.

Maternal mortality rates will merit your special attention. While these rates for North Dakota show very favorable comparison with other states, it is probably safe to say that 75 per cent of all maternal deaths are probably due to preventable

causes. Lack of adequate prenatal care, in spite of the fact that a large majority of cases have contact with their physician at some time during the gestation period, is undoubtedly the proper point of attack.

The major projects of the Health Department are:

1. Full time district health units composed of from one to four counties with a trained personnel. Nothing can be accomplished under the present system. Full time district units may be maintained for approximately the same amount of money which we are now spending.

2. Periodic physical examinations. Every general practitioner should be able to make these examinations. No special equipment is required.

3. Special campaigns to be conducted for immunization against diphtheria and smallpox.

4. A small added appropriation for maintaining our sanitary engineering bureau now supported by the Rockefeller Foundation.

5. Full time county nurses.

6. The Women's Auxiliary of the American Medical Association has now become a very effective service organization. Their program of public health should be highly commended. We recommend that any effort to organize a unit in North Dakota receive your sympathetic endorsement.

C. J. MCGURREN, M.D.

A. A. WHITEMORE, M.D.

G. F. DREW, M.D.

H. E. FRENCH, M.D.

B. K. KILBOURNE, M.D.

Committee

This report carried the endorsement of Dr. H. E. French, Director of the State Public Health Laboratories.

Dr. Williamson moved that this report be accepted as read. Motion seconded and unanimously carried.

COMMITTEE ON MILITARY AFFAIRS

Dr. E. P. Quain, Chairman, presented the following report:

To the President and House of Delegates of the North Dakota State Medical Association:

The chairman of your committee has made inquiry from the Medical Department of the Army as to what problems would be of greatest importance to the medical profession of our state at the present time. In reply to this inquiry, the following information was obtained through the Senior Medical Officer at Fort Lincoln:

1. The medical profession of North Dakota is complimented for its full coöperation at all times with the activities of the Medical Department of the Army.

2. Attention is called to the necessity of depending on the examination of physicians outside of the regular and reserve corps for a number of appointments to army service. It is very important whenever any man is examined for the army that the examination be especially thorough, both for the

purpose of rejecting those physically unfit and to discover and eliminate all those whose mental stamina make them unsuitable for the rigors of military service. Failure to exercise care in weeding out defectives of any kind before the candidate is sent to C.M.T.C., R.O.T.C., or to any other military training, entails unnecessary expense to the government and, later, the candidate is subjected to the humiliation of discharge from the service because of physical or mental deficiencies that should have been discovered before he was sent from home.

3. Recent graduates in medicine are urged to apply for membership in the Medical Reserve Corps in order that they may obtain sufficient training in time of peace to be of some service to the country in case of any national disaster. About 10 per cent of the doctors of the state are now members of the Medical Reserve Corps; this percentage is not sufficient if mobilization should be threatening.

4. Special attention is called to the Citizen's Military Training Camp and the opportunity for young men to obtain military training at these camps. It is suggested that inasmuch as the physician in each community is an educated and respected personage whose opinion and advice would be heeded, every doctor should take an active interest in inducing young men to go to these camps. Every doctor should familiarize himself with the physical and mental requirements as well as the opportunities offered the boys who attend camp.

5. Attention is called to the fact that last year several boys were rejected for C.M.T.C. training at Fort Lincoln because of hernia which had been overlooked by the home physician. This happened because the preliminary examination had been too superficial.

Respectfully submitted,

E. P. QUAIN, M.D., Chairman

L. B. GREENE, M.D.

Committee

Dr. Burton moved that this report be accepted as read. Motion seconded and unanimously carried.

COMMITTEE ON NECROLOGY

Dr. James Grassick, for the Council, presented the following report:

Let us pause in the midst of our activities and for a time lay aside the working tools of our profession, to pay our tribute of respect to the memory of those of our number who during the year have passed from our ken.

JOHN DUNCAN TAYLOR

Dr. J. D. Taylor was born of Scottish parents in Detroit, Michigan, May 16, 1859, and died at Grand Forks, September 16, 1929. He graduated from the Michigan College of Medicine and Surgery in 1891 and came immediately to North Dakota where he practiced his profession until his death.

His pleasing personality, sterling integrity, honesty of purpose, and ability to mingle with men brought him into prominence. He was the first

president of the Grand Forks Medical Society. He served for eight years as State Senator and through his influence were established the Public Health Laboratory, the School of Medicine at the University, and the Bureau of Vital Statistics. He served as mayor of the city of Grand Forks and as a member of the State Board of Regents of the State University. For half a century he gave the best of which he was capable for the upbuilding of the state and the good of the profession that he loved so well.

As we "Hallow the Fiftieth Year" of service of this pioneer physician of Dakota, we remember him as the genial companion, the trustworthy friend, the faithful public servant, the sympathetic doctor and the kind hearted and courteous gentleman.

HENRY MASON WHEELER

Dr. H. M. Wheeler was born in Newport, New Hampshire, June 23, 1853. He was a graduate of the University of Michigan and of the College of Physicians and Surgeons of New York. He came to Grand Forks, N. D., in 1881 and made it his permanent residence.

Dr. Wheeler was public minded and served as alderman of his home city and also as mayor for two consecutive terms. He was surgeon for the Great Northern and Northern Pacific Railways and was sixth president of the North Dakota Medical Association. He, also, for many years was secretary of the North Dakota Medical Examining Board where his influence was used in raising the standards of our licentiates. His mind was keen, his judgment sound, and his will strong. These characteristics made him an outstanding figure in professional and community life. He was a type of the early pioneers who with vision and earnest endeavor laid a sound and enduring foundation for our state.

Doctor Wheeler loved his profession and was jealous of anything that would tarnish its fair name. He was the uncompromising foe of pseudo-healing cults, by whatever name known. He was a man of the open; he loved the plains, the woods, and the lakes, and his keenest enjoyments were in the sports of field and stream.

With the passing of Dr. Wheeler the state loses an honored citizen, the community a staunch friend, and the profession a distinguished physician.

LUDVIG S. PLATOU

Dr. L. S. Platou was a native of Norway and a graduate of King Frederick University, Christiania. He was licensed in North Dakota, January 12, 1894. At the time of his death, which occurred in Minneapolis, Minn., December 14, 1929, he was 62 years of age.

Dr. Plaou's work was chiefly done at Valley City, North Dakota, with some years at Fargo. He was held in high esteem as a physician and surgeon and as a man of affairs. He took an active part in civic welfare and while serving as mayor was instrumental in securing for his home city an excellent water supply. This he considered his outstanding achievement of his three terms as mayor of Valley City, and a splendid monument it is. He was ac-

tively connected with various financial institutions and in addition was an extensive land owner and operator. He was a prominent figure in political circles of the state and at one time was a candidate for Governor. In recognition of his ability he was honored by being appointed by President Roosevelt as a member of the Board of Conservation of Natural Resources and served with distinction in that capacity.

Dr. Platou was a gentleman of fine bearing, and will be remembered as a distinguished physician and surgeon and as a progressive member of society.

JOHN E. SCHNEIDER

Dr. J. E. Schneider was born October 22, 1844, of German-French parentage, near the city of Metz, France, and died at Bowman, North Dakota, May 11, 1930. He was, so far as known, the oldest practicing physician in the state.

He came to this country with his parents when he was ten years old and at the age of nineteen enlisted in the Forty-Eighth Wisconsin Infantry and served two years in the Civil War. Later, studying medicine, he was licensed by examination and registered as a physician in the territory of Dakota in 1887. He was a charter member of the Southwestern District Medical Society and served as its president from 1911 until 1924.

Dr. Schneider was a typical "Doctor of the Old School," going in and out amongst his people, hearing their troubles, bearing their burdens, binding up their wounds, easing their pains, and giving the best that he had for their welfare.

Dr. Carr moved that this report be adopted. Motion seconded and unanimously carried.

COMMITTEE ON SCIENTIFIC WORK

Dr. N. Oliver Ramstad moved that the program for the Forty-third Annual Session of the North Dakota Medical Association be accepted as the official report of this committee.

Motion seconded by Dr. Stackhouse and unanimously carried.

Dr. Greene moved to adjourn.

Motion seconded and the House of Delegates adjourned at 11:25 P. M., to reconvene at 12 noon, Tuesday, May 27.

PROCEEDINGS OF THE COUNCIL OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION—1930

FIRST MEETING—Monday, May 26

The first meeting of the Council was called to order at 11:30 P. M. by the Chairman, Dr. J. W. Bowen, Dickinson.

APPOINTMENT OF AUDITING COMMITTEE

The Chairman appointed the following to serve as an auditing committee:

George F. Drew, M.D., Devils Lake.
E. M. Ransom, M.D., Minot.

ACTION ON SOUTHERN DISTRICT MEDICAL SOCIETY

Dr. L. B. Greene, Edgeley, stated that they had been unable to hold any meetings in this district for two or three years, but expressed the opinion that it might be the best plan to pay the dues and keep the society technically alive for another year at least, allowing the members to attend the meetings that were most convenient for them in the meanwhile. He believed this would work out to the best advantage for all concerned.

Dr. F. L. Wicks, Valley City, said there was nothing obligatory about attending society meetings but the payment of dues was obligatory. He thought the matter of disbanding a society should be carefully considered for it established a precedent and the small societies needed to hold their membership.

The Chairman brought up the question of expenditure of funds in the proposed educational program.

Discussed by Drs. MacGregor, Greene and Williamson, but no definite action was taken.

Dr. MacGregor moved to adjourn, to meet at the call of the Chairman.

Motion seconded and unanimously carried.

Adjournment at 11:45 P. M.

SECOND MEETING—Tuesday, May 27

The second meeting of the Council was called to order at 1:35 P. M. by the Chairman, Dr. J. W. Bowen, Dickinson.

PERMANENT COMMITTEE ON NECROLOGY

Dr. George M. Williamson moved that Dr. James Grassick, of Grand Forks, be made an honorary member of the Council and a permanent committee of one on necrology.

Motion seconded by Dr. MacLachlan and unanimously carried.

Dr. Williamson explained that at the request of the Council, memorials had been prepared by Dr. Grassick for Dr. Wheeler, Dr. Taylor, Dr. Platou and Dr. Schneider.

Dr. E. M. Ransom: In order to assist Dr. Grassick in this important matter I think we should carry out the suggestion made some years ago of having each member fill out a card with the essential data concerning his career and file it with the secretary. In this way data will be easily available when necessary.

I move that the Secretary be empowered to have a sufficient number of such cards printed and sent to our membership with the request that they fill them out promptly and send a copy to the secretary of their local society and a copy to the secretary of the North Dakota State Medical Association.

Motion seconded and unanimously carried.

NEW BUSINESS

Under the head of new business Dr. Ramstad stated that the Committee on Scientific Work had found themselves somewhat handicapped by lack of funds for paying traveling expenses of men whom they wished to invite to participate in the program. He asked for an expression of opinion from the Council in regard to the payment of expenses of invited guests.

This question was discussed by Drs. MacLachlan, Ramstad, Greene, and Williamson.

Dr. Williamson moved that a sum of \$500.00, or any part thereof, be placed at the disposal of the Committee on Scientific Work for the joint meeting with South Dakota in 1931.

Motion seconded and unanimously carried.

INVITATION FOR MEETING OF 1932

Dr. Williamson, on behalf of the Grand Forks District Society, invited the North Dakota State Medical Association to hold its Forty-fifth Annual Session in Grand Forks in 1932.

As there was nothing further to come before the Council at this time the meeting was declared adjourned at 2:00 P. M., to reconvene at 8:00 A. M. Wednesday.

THIRD MEETING—Wednesday, May 28

The Council met and was called to order at 8:30 A. M. by the Chairman, Dr. J. W. Bowen, Dickinson.

SALARY OF SECRETARY

Dr. E. M. Ransom: In connection with the work of the auditing committee this year the question of the salary of our secretary came up for consideration. With our present membership our Secretary receives practically \$400.00. Our acting secretary feels that this is in excess of what is earned. As we understand it, this fee was allowed the secretary when he was required to visit component societies, and perhaps make a trip out of the state once a year. At present this is not being done and we believe the

money could be used to better advantage in other channels.

I move that the salary of the secretary shall be fixed at \$200.00 per year.

Motion seconded by Dr. MacLachlan and unanimously carried.

ELECTION OF OFFICERS

Dr. Williamson moved that Dr. Bowen continue as Chairman of the Council.

Motion seconded and unanimously carried.

Dr. Ransom moved that Dr. Williamson be elected to succeed himself as Secretary of the Council.

Motion seconded and unanimously carried.

As this completed the business before the Council for the Forty-third Annual Session, the meeting was declared adjourned at 8:50 A. M., *sine die*.

GEORGE M WILLIAMSON, M.D.
Secretary of Council

PROCEEDINGS OF THE GENERAL MEETINGS OF THE NORTH DA- KOTA STATE MEDICAL ASSOCIATION—1930

FIRST DAY—Tuesday, May 27

The first general meeting was called to order at the Masonic Temple, Bismarck, N. D., at 8:45 A. M., by the President, Dr. John Crawford, New Rockford.

ADDRESS OF WELCOME

Hon. A. P. Lenhart, Mayor of Bismarck:

It gives me great pleasure to extend to you a hearty welcome. Bismarck is very glad to entertain you on the occasion of your forty-third annual convention. We stand ready to help you in any way we can to make this a very successful meeting. We hope you will have a large meeting and while you are here we shall be glad if you have time to look over our city and see how we have grown. I think you will find it one of the best towns in North Dakota, and one of the cleanest towns in the state. We have grown 75 per cent in the last ten years, which I am sure you will agree is making progress. I hope you will get down to see our city water-works. We should be glad to show you how the dirty, cloudy Missouri water is turned into the splendid, sparkling drinking water we have here.

I wish to say a word regarding our traffic

ordinance. While you are here you will find that we have stop lights on some of our streets and you are expected to stop when you reach those streets. We also have parking rules in the business district. If it should be your fortune to be invited up to the city hall for some violation of these rules if you will take your card to some member of your local committee on entertainment they will turn it over to me and I shall be glad to see that you are caused no further embarrassment.

Please be assured that we are glad to have you with us and we hope you will return for some future meeting.

SCIENTIFIC PROGRAM

Dr. A. A. Whittmore, Bismarck, read a paper entitled, "A Study of Maternal Mortality."

Dr. E. M. Ransom, Minot, read the paper of Dr. John H. Moore, Grand Forks, entitled, "The Treatment of the Nausea and Vomiting of Pregnancy," as Dr. Moore was unable to be present.

These two papers were discussed together by Dr. Ransom.

Dr. W. E. G. Lancaster, Fargo, read a paper entitled, "Epidemic Cerebrospinal Meningitis: Diagnosis and Treatment."

Discussed by Dr. H. A. Brandes, Bismarck.

Dr. Arthur S. Hamilton, Minneapolis, read a paper entitled, "Pain as a Factor in Nervous Diseases."

Discussed by Dr. J. D. Carr, Jamestown.

Dr. George M. Williamson, Grand Forks, presented a report of the action of the State Committee on Basic Science.

Discussed by Dr. V. J. LaRose, Bismarck.

Dr. F. C. Rodda, Minneapolis, addressed the Society on "The Occurrence of Some Diseases in Relation to Age Groups."

Discussed by Dr. R. B. Radl, Dickinson.

The meeting was declared adjourned at 12 noon, to reconvene at 1:30 P. M.

FIRST DAY—Afternoon

The afternoon meeting was called to order at 2:00 o'clock by the Second Vice-President, Dr. Paul H. Burton, Fargo.

Dr. John Crawford, New Rockford, delivered his presidential address, following which he took the Chair.

Dr. Arthur S. Hamilton, Minneapolis, gave a clinic on "Nervous and Mental Diseases," the cases being presented by Dr. H. A. Brandes, Bismarck.

Dr. F. C. Rodda, Minneapolis, gave a clinic on "Pediatric Diseases," the cases being presented by Dr. A. M. Brandt and Dr. P. L. Owens.

The meeting was declared adjourned at 4:30 p. m., and the Association was entertained at a Military Review at Fort Lincoln.

The annual banquet was held at the Hotel Patterson at 7:00 p. m., with Dr. B. S. Nickerson as toastmaster, and Governor George Shafer as the guest speaker.

SECOND DAY—Wednesday Morning, May 28

The Association reconvened and was called to order at 9:00 a. m., by the President, Dr. John Crawford, New Rockford.

Dr. Russell Gates, Minot, read a paper entitled, "Duodenal Diverticula."

Discussed by Dr. Paul H. Burton, Fargo, and in closing by Dr. Gates.

Dr. William L. Benedict, Rochester, Minn., read a paper entitled, "Significance of Temporary Blindness."

Discussed by Dr. Rolfe Taintor, Fargo, and in closing by Dr. Benedict.

Dr. J. Tate Mason, Seattle, Wash., addressed the Association on "Some Observations on Diseases of the Thyroid Gland."

Discussed by Dr. J. W. Bowen, Dickinson.

Dr. H. O. Altnow, Minneapolis, read a paper entitled, "The Patient's Outlook in Hypertension."

Discussed by Dr. W. H. Bodenshtab, Bismarck, and in closing by Dr. Altnow.

Dr. Ralph E. Pray, Fargo, read a paper entitled, "Thymic Disorders: Their Recognition and Treatment, with Report of Sixteen Cases."

Discussed by Dr. H. E. French, Grand Forks.

The Association adjourned at 12:00 to reconvene at 1:30 p. m.

SECOND DAY—Afternoon

The Association met and was called to order at 1:50 p. m., by the President, Dr. John Crawford, New Rockford.

President Crawford gave a brief report of the proceedings of the House of Delegates, announced the newly elected officers and the location of the next meeting place. He then appointed Dr. Sihler and Dr. Pray to escort the President-elect, Dr. Andrew Carr, Sr., to the Chair.

Dr. Crawford: Before I leave the platform I wish to thank you all for your cordial support throughout the year. I have had the coöperation of all the committees and this has made the

work of the President very simple indeed. Our new President, Dr. Carr, is mature in his judgment and I am sure is entitled to all the honors of this Association. I hope he will enjoy the office as much as I have.

Dr. Carr: Members of the North Dakota State Medical Association:

Custom has decreed that the incoming president may present his ideas and opinion on important subjects relative to the welfare of the profession and its constituents.

These may be subjects demanding national attention or subjects of a purely local nature, based upon his observation and experience as a citizen, as a physician and as a president-elect of this association. Custom has also decreed that he may offer such constructive advice and criticism as may be helpful in building up the future policies of the association. Our retiring president has performed these duties well and although we may not all agree with him in the detail, homage is due him for the bold and fearless presentation of his opinions from his point of view.

First of all, I wish to thank you for the honor bestowed in electing me president.

And, now, in turn, I wish to ask your individual coöperation in the endeavor to make the ensuing year one of the most profitable to the association and one of the most satisfactory to you as individual members of the association. As president, I deeply feel the responsibility imposed upon the office and know that a great deal of thought and of energy will be required to pilot us safely through so that at the end of the term the majority may say—"Well done thou good and faithful servants."

The component units of any organization must determine to a great extent the action of the whole. The county or district society must reflect the attitude of its individual members who are its component units. The greatest asset of any society is its active members. On the other hand its greatest liability is the inactive and indifferent members—the drones. No member can ever receive the full benefit of any society nor can he reach the maximum of information unless he takes an active part in its proceedings.

On behalf of our society, I wish to compliment and thank our Committee on Public Policy and Legislation for the noble work done for us during the session of the last legislature. I wish also to compliment and thank the committee appointed to investigate what other state societies have done, and what they have accom-

plished along the line of the Basic Science Law.

It was my good fortune to be present at the meetings held in St. Paul in 1928 and 1929. I had an invitation for the meeting this year, but it so happened that I could not attend. I was convinced that Wisconsin had already accomplished great things. In fact, the Wisconsin State Medical Association had apparently managed matters so skillfully that they could absolutely depend upon their legislators to grant them almost anything they asked for,—and the Minnesota State Medical Association was coming along very satisfactorily up to that time. And right here, I would suggest that our Committee on Public Policy and Legislation get busy right away and decide upon our legislative needs and formulate data to be sent to each counselor, or to the secretary of each component society. Then I would suggest that the president, secretary and counsellor of each society arrange an interesting program for one of their medical meetings and have all of the aspirants for legislative offices in their respective districts present. Demonstrate plain facts to them as to what the members of our State Medical Association wish to accomplish in the way of legislative preventive medicine; eradication of communicable diseases; show them by actual figures on charts, what has already been accomplished with antitoxin, toxin-antitoxin vaccination, treatment of tetanus, diabetes, tuberculosis, anemia, ulcers of the stomach and bowels and so on. Then call on each aspirant to declare himself as to whether, if elected, he can conscientiously back up the North Dakota State Medical Association all along the lines of legislation necessary for the promotion of public health work. Once convinced of the crying need of this work which can only be done by the aid of the medical profession, as a matter of self esteem and of self protection, they will become interested in the welfare of their children, of the children of the people of their vicinity, and the state at large.

Another suggestion: write short articles to be read or spoken at the movies, over the radio, at teachers' meetings, at Parent-Teachers' meetings, at Women's Clubs, and so on. The education of the public is a big job, but it can be done if the medical profession will give time and effort sufficient. In fact, the physical redemption of the human family can be accomplished only by the aid of the medical profession.

This meeting has been a most interesting, instructive and enjoyable one, and I want to congratulate the members of the local profession on

the wonderful program provided and the people of Bismarck for the excellent entertainment, and their hearty welcome and generous hospitality extended to us.

SCIENTIFIC PROGRAM

Dr. Archa E. Wilcox, Minneapolis, read a paper entitled, "Treatment of Fractures; General Discussion of Fundamentals and Reports of Cases."

Discussed by Dr. Emil Geist, Minneapolis.

Dr. T. J. Kinsella, Glen Lake Sanatorium, Minneapolis, read a paper on, "Collapse Therapy of the Lung."

Dr. E. P. Quain, Bismarck, gave a motion picture demonstration of "Diagnosis and Treatment of Infections of the Hand."

President Carr, on behalf of the Association, thanked the guest speakers for their courtesy in coming to Bismarck and taking part in the program, and declared the Forty-third Annual Session adjourned at 5:00 P. M., *sine die*.

CHARLES MACLACHLAN, M.D.

Acting Secretary

SECOND DAY—Tuesday, May 27, 1930

The second meeting of the House of Delegates was called to order at the Hotel Patterson, at 12:45 P. M. by the President, Dr. John Crawford, New Rockford.

The Secretary called the roll and the following Delegates, Councilors and Officers responded:

Andrew Carr, Sr., M.D., Minot.
 Paul H. Burton, M.D., Fargo.
 William W. Wood, M.D., Jamestown.
 Murdock MacGregor, M.D., Fargo.
 G. F. Drew, M.D., Devils Lake.
 George M. Williamson, M.D., Grand Forks.
 E. M. Ransom, M.D., Minot.
 F. L. Wicks, M.D., Valley City.
 N. Oliver Ramstad, M.D., Bismarck.
 P. G. Arzt, M.D., Jamestown.
 L. B. Greene, M.D., Edgeley.
 J. W. Bowen, M.D., Dickinson.
 B. K. Kilbourne, M.D., Fargo.
 W. F. Baillie, M.D., Fargo.
 H. B. Huntley, M.D., Leonard.
 C. E. Stackhouse, M.D., Bismarck.
 H. E. Brandes, M.D., Bismarck.
 A. E. Spear, M.D., Dickinson.
 W. F. Sihler, M.D., Devils Lake.
 F. O. Woodward, M.D., Jamestown.
 J. J. Seibel, M.D., Harvey.

A. R. Sorenson, M.D., Minot.
 E. A. Pray, M.D., Valley City.
 W. C. Fawcett, M.D., Starkweather.
 V. J. LaRose, M.D., Bismarck.
 James Grassick, M.D., Grand Forks.
 A. A. Whittemore, M.D., Bismarck.
 L. W. Larson, M.D., Bismarck.
 E. P. Quain, M.D., Bismarck.
 W. H. Long, M.D., Fargo.
 A. D. McCannel, M.D., Minot.
 H. E. French, M.D., Grand Forks.
 President Crawford and Acting Secretary
 MacLachlan.

The President declared a quorum present and the House of Delegates duly constituted for the transaction of business.

On motion regularly seconded and carried the reading of the minutes of the meeting held on May 26th was dispensed with.

REPORTS OF COMMITTEES

COMMITTEE ON MEDICAL EDUCATION

Dr. H. E. French, Chairman, presented the following report:

To the House of Delegates, North Dakota State Medical Association.

The Committee on Medical Education would respectfully report as follows:

Provision in the state for training in medicine remains as it has been and is well known to you. The School of Medicine of the University offers the first two years of the standard medical curriculum. The situation in the last few years has crystallized into about the following shape: Facilities in the way of room, equipment, and size of staff make it seem necessary to limit the enrollment to about thirty students in each class, groups that can be handled readily as one section. This makes provision, at the present time at least, for all well qualified applicants who are residents of the state and for a few others; it, however, compels the rejection of 200 or more nonresident applicants each year.

Popular health instruction and education of the laity as to what medicine means also remain in status quo, and not so clearly cut and defined as regular medical training. In the middle of the winter the Grand Forks District Medical Society appointed a committee to see if some arrangement could not be made with the local broadcasting station for a regular series of health talks. The committee found the station very ready to provide for a talk each week, and, in fact, the management of the station had already spoken to the chairman of the committee regarding a regular weekly series of fifteen minute talks. The result was that the chairman of this committee has been broadcasting on KFJM every Wednesday evening for the past three of four months. Very possibly similar broadcasting is being done from other stations. During the year, too, the Grand Forks District Society

caused to be run as an advertisement in one issue of the *Grand Forks Herald* the list of names of all qualified doctors of medicine in the district.

The committee would commend these activities to the consideration of both the State Association and the other district societies, and it would be glad to know of any activities in these or similar lines going on in the state.

As it has done in other years, the Committee would recommend to both the State Association and the District Societies that efforts be made to place *Hygeia* in every public library and every high school library in the state; also, that more definite and serious consideration of the general subject of Public Health Education be given in both business meetings and programs of the Association.

H. E. FRENCH, M.D.
 G. M. WILLIAMSON, M.D.
 C. R. TOMPKINS, M.D.

Committee

Dr. LaRose moved the adoption of this report. Motion seconded and unanimously carried.

COMMITTEE ON JOINT MEETING WITH THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION IN 1931

Dr. E. P. Quain, Chairman, presented the following report:

To the House of Delegates:

The committee has accepted unanimously the kind offer officially presented to our Association by a committee from the South Dakota State Medical Association to join with them in 1931 in the celebration of the Fiftieth Anniversary of organized medicine in the twin states—North and South Dakota.

The meeting place chosen is Aberdeen, South Dakota, and the time of meeting, tentatively recommended by your committee, to be the last week in May or the first week in June, as the joint committee may decide.

Since the members of the committee from South Dakota were obliged to leave for their homes before the conclusion of the meeting of our Association; and since the president of their State Association, who was also a member of their committee, desired that preliminary steps be inaugurated immediately for the success of the proposed meeting, your committee recommended to him, after consultation with our President-elect, Dr. Andrew Carr, the following three members of our Association to act with three members from the South Dakota Association on an Interstate Committee on Arrangements of Programs and on all other matters pertaining to the temporary union of our Associations:

W. H. Long, M.D., Fargo.
 L. W. Larson, M.D., Bismarck.
 R. D. Campbell, M.D., Grand Forks.

The presidents of the two State Associations to be ex-officio members of the Interstate Committee.

Respectfully submitted,
 E. P. QUAIN, M.D.

Chairman

Dr. Burton moved the adoption of this report. Motion seconded and unanimously carried.

The President: Owing to the necessary change in our program this morning our committee on basic science did not have time properly to present the subject. If anyone wishes, we can take this up at this time or it can be brought up again this afternoon in general meeting if you so desire. Whatever is done, I hope this committee will remain active during the coming year.

Dr. J. W. Bowen, Dickinson: I doubt if the discussion we would get out of an open meeting on such a subject as basic science would be of much benefit. I think the committee can handle the matter better than anyone else.

I move that the present committee on basic science be continued and present a report at our annual meeting next year, or at the meeting of the Committee on Public Policy and Legislation. Motion seconded by Dr. W. C. Fawcett.

Discussed by Drs. Williamson, MacGregor, Crawford, LaRose, and Stackhouse, following which Dr. Bowen's motion was put to a vote and unanimously carried.

On motion regularly seconded and carried, the House of Delegates adjourned at 1:25 p. m., to reconvene at the luncheon hour on Wednesday.

THIRD DAY—Wednesday, May 28, 1930

The third meeting of the House of Delegates was called to order at the Hotel Patterson, at 1:00 p. m., by the President, Dr. John Crawford, New Rockford.

The Secretary called the roll and the following Delegates, Councilors and Officers responded:

Andrew Carr, Sr., M.D., Minot.
 Paul H. Burton, M.D., Fargo.
 William W. Wood, M.D., Jamestown.
 Murdock MacGregor, M.D., Fargo.
 G. F. Drew, M.D., Devils Lake.
 E. M. Ransom, M.D., Minot.
 F. L. Wicks, M.D., Valley City.
 N. Oliver Ramstad, M.D., Bismarck.
 P. G. Arzt, M.D., Jamestown.
 L. B. Greene, M.D., Edgeley.
 J. W. Bowen, M.D., Dickinson.
 B. K. Kilbourne, M.D., Fargo.
 W. F. Baillie, M.D., Fargo.
 H. B. Huntley, M.D., Leonard.
 C. E. Stackhouse, M.D., Bismarck.
 H. E. Brandes, M.D., Bismarck.
 A. E. Spear, M.D., Dickinson.

W. F. Sihler, M.D., Devils Lake.
 F. O. Woodward, M.D., Jamestown.
 J. J. Seibel, M.D., Harvey.
 A. R. Sorenson, M.D., Minot.
 E. A. Pray, M.D., Valley City.
 W. C. Fawcett, M.D., Starkweather.
 V. J. LaRose, M.D., Bismarck.
 James Grassick, M.D., Grand Forks.
 A. A. Whittemore, M.D., Bismarck.
 L. W. Larson, M.D., Bismarck.
 E. P. Quain, M.D., Bismarck.
 W. H. Long, M.D., Fargo.
 A. D. McCannel, M.D., Minot.

President Crawford and Acting Secretary MacLachlan.

The President declared a quorum present and the House of Delegates duly constituted for the transaction of business.

On motion regularly seconded and carried the reading of minutes of the previous meeting was dispensed with.

MISCELLANEOUS BUSINESS

REPORT OF NOMINATING COMMITTEE

Dr. Murdock MacGregor, Chairman, presented the following report:

President, Andrew Carr, M.D., Minot.
 President-Elect, Henry M. Waldren, Sr., M.D., Drayton.
 First Vice-Pres., Paul H. Burton, M.D., Fargo.
 Sec. Vice-Pres., J. W. Bowen, M.D., Dickinson.
 Secretary, A. W. Skelsey, M.D., Fargo.
 Treasurer, William W. Wood, M.D., Jamestown.

COUNCILORS (for three years)

4th District, E. M. Ransom, M.D., Minot.
 5th District, F. L. Wicks, M.D., Valley City.
 9th District, J. J. Seibel, M.D., Harvey.
 Delegate to A. M. A. for 1931, John Crawford, M.D., New Rockford.
 Alternate to A. M. A. for 1931, A. W. Skelsey, M.D., Fargo.

Recommend to Governor for appointment to the State Board of Examiners:

J. W. Bowen, M.D., Dickinson.
 C. E. Stackhouse, M.D., Bismarck.
 F. L. Wicks, M.D., Valley City.

Dr. A. E. Spear, Dickinson, moved that the rules be suspended and that the acting secretary cast a unanimous ballot for these candidates.

Motion seconded and carried.

Dr. MacLachlan reported the ballot cast and the President declared these nominees duly elected.

REPORT OF AUDITING COMMITTEE

Dr. E. M. Ransom: The auditing committee have examined the books and vouchers of the Treasurer and found the accounts in good condition.

I move that the report of the Treasurer be accepted.

Motion seconded by Dr. Burton and unanimously carried.

REPORT OF COMMITTEES ON BOUNDARIES FOR DISTRICT SOCIETIES

Dr. A. R. Sorenson: The Committee has found it difficult to determine definitely just what the present district boundaries are, and we recommend that the state be redistricted. We believe it will be conducive to better societies if the districts are rearranged so that there will be a large medical center in each district, where good programs can be put on. The present arrangement of districts evidently follows the old judicial districts which have been abolished.

The Committee also felt that perhaps it would be better to abolish the smaller districts that have only a few members, and only one meeting a year, and have it so arranged that there will be a good medical center so that there will be more scientific interest and better societies.

Dr. Healy suggested that the matter be referred to this body and introduced a motion that each physician can belong to that district only in which he resides, and that he can become a member of another district society by transfer card only.

Dr. Murdock MacGregor: I do not see how we can take any action without having the district societies we have now disband. Then we could re-zone the districts and decide where each should be placed.

Dr. Charles MacLachlan: I would suggest that the President call a meeting of the councilors of each district and that they bring with them permission from their societies to represent them in every way. Then the re-zoning can be done properly. I think this committee might be continued and bring in a report later.

Dr. W. F. Sihler: As Dr. MacGregor pointed out, the Council is the court of last appeal, and if this matter has been considered sufficiently I do not think it is necessary to ask the consent of any districts. If it is the best thing for our state association to do, I think we can go ahead and do it.

Dr. A. R. Sorenson: It was not the feeling of the Committee that any definite action would be taken at this time. I rather agree with Dr. MacLachlan, and think that would assure harmony. We thought it would be well if a committee could be appointed at this time to map out the new districts.

Dr. Murdock MacGregor: I do not know of any reason for such a committee. Our only desire is to arrange things so that the local men will be contented. If it is better to have five districts than ten, let that be arranged. We want to please the local men in whatever action is taken.

Dr. Charles MacLachlan: I think the local societies should be notified that this matter has been discussed and that they should be asked for their ideas on the matter. If necessary, the council can meet during the year and then the rearrangement can be made under the direction of the committee.

I move that the present committee be asked to continue their efforts and that a report from them be presented to the Council of the State Association before October first, with the idea of calling together representatives from each of the local units to decide upon the proposed redistricting.

Motion seconded by Dr. Stackhouse and unanimously carried.

Dr. A. E. Spear: If there is supposed to be a councilor from each local society we are short some councilors. Your committee did not mean to be arbitrary in their suggestions, but we felt that something should be done. If one county society declines to accept an applicant for membership we do not want that man to apply to another society and be accepted. It is a matter of self-preservation for the small societies, and if the members are permitted to join other societies at will, we soon will have no small societies left. It seems to us that the state can be divided so that we can have eight or perhaps more good strong district societies.

Dr. Murdock MacGregor moved that a vote of thanks be extended to the local society for their hospitality and splendid entertainment.

Motion seconded and unanimously carried by rising vote.

THE PRESIDENT: Before we adjourn I wish to state that I have had the support and coöperation of the House of Delegates, the officers and the Council and I extend my thanks. Dr. Carr, our new president is a man of ripe experience and mature judgment and I hope he will receive

the same support and coöperation you have given me. I thank you.

If there is nothing further to come before the House of Delegates I declare the meeting adjourned *sine die*.

Adjournment at 1:35 P. M.

CHARLES MACLACHLAN, M.D.
(Acting Secretary)

PRESIDENT'S ADDRESS

BY JOHN CRAWFORD, M.D.

NEW ROCKFORD, NORTH DAKOTA

Friends and Brother Practitioners:

No doubt everyone of you have taken notice of the fact that in the recent straw-vote, taken by the Literary Digest, both lawyers and doctors were decidedly wet. This would naturally lead one to think that they were also wet in their personal habits. However, this is not the case. But both the doctor and lawyer have experienced in their respective professions the dire result of hard drinking of liquor of high alcoholic content under the present Volstead Law. As ane clergyman, high in his respective denomination put it, "Not only are our boys going to hell, due to the detrimental effect of the Volstead Act, but our girls also are being torn away with them in great numbers." This proves that every honest professional man must admit that our boys and girls of high school age did not drink liquor, prior to the Volstead Act, and the number of college students also was very small. Today, however, it is the common thing, generally accepted. We doctors know that the drinking of hard liquor increases passion, and decreases control over passion. Today we are treating more venereal diseases in boys and girls of high school age than ever in the history of our country. The commitments to maternity hospitals are rapidly increasing, especially amongst the very young. This brings us to another phase, so aptly put by a young college student who said, "We have three forms of government: state, federal and underworld." The underworld with a controlling influence over both the Federal and State Government. Crime costs our government ten billion dollars a year; two-thirds of this amount are due to the violation of the Volstead Law. The bootlegger and the underworld vote with the Women's Christian Temperance Union, and certain of the churches, to keep the Volstead Law in operation. This I personally know to be true. A real clergyman

and a real pastor of his flock, wherever he has been stationed, having held charges in New York, Chicago, and Kansas, while the country was wet, informed me that since the country went dry, the morals of the young people of the congregations were degraded to such an extent that they were compelled to keep all ante-rooms and even the coal bins locked, in order to keep the young from using these rooms for improper and immoral purposes.

But since we are dealing with economic questions, there is another matter I would like to bring to your attention. Ours is the only profession that is trying to bring about its extinction by sponsoring health laws. No measure scientific, or otherwise, beneficial to the health of humanity has ever originated outside of the ranks of rational medicine. Yet, the cults by various means, most of them disreputable, have induced a large part of the public, and many of the legislature, to give them friendly and substantial recognition, to the perceptible detriment of public health.

One of the most serious problems we have to deal with as to our future economic welfare is emigration. Before the war the economic human dregs of Southern Europe were being poured into the United States, at \$7.50 per head, to compete with our already overcrowded American laborers. Our old original stock, composed of English, Irish, Scotch, German, Holland Dutch, French, Huguenots Swiss and Nordic races have the best health records and the lowest crime records. Let us rate them as number one. Then we have the crime ratios of the Southern European dregs, six to twenty-six times the above, and we will also find that they fill our free clinics, our asylums, and feebleminded institutions at the above ratio. There is no such thing as a melting pot. One hundred and fifty millions is our maximum population, over and above this we will begin to drift towards the conditions existing in some European countries. Let us then as medical men strive for a selective people, the same as our old pioneer stock, and say to hades with the melting pot.

Our State and National Overlapping Child Welfare Bureaus have much to learn, especially in their baby saving movement. They should be commended, also condemned. Let us commend them for saving healthy children from acute illness and contagious diseases. Let us condemn them for prolonging the life of children doomed to mental and moral crippling. The proper slogan would be "Save the babies worth saving,"

and I am my brothers keeper only if he's worth keeping.

Another phase of our present day condition that should interest us especially, is that of the nursing problem. The nursing problem for the average family is a serious question. At present, the only ones that can afford nursing or get nursing are the real wealthy or the poverty-stricken. We have gone too far in the pre-nursing educational requirements. They require all who wish to take up nursing to have completed at least a high school education, and preferably college or normal school in addition. They then put in three years of intensive course of work and lectures, thus, in most instances, turning out nurses that may be well fitted for heads of institutions, but not for ordinary nursing. After their long training they will not work for the remuneration the average person can afford to pay. And in addition, they require a maid to wait on them. In fact, they are pseudo M.D.'s. Always telling that doctor So and So does not do it that way. Vice President Marshall said we need a good five cent cigar. I say, we need a reasonable nurse, with a fair education and training, with a considerable bit of the milk of human kindness in her general makeup, and above all, one who has not become so stilted in her training, that she cannot carry out the orders of the doctor, without correction or comment, and at a price the average family can afford to pay.

This is one of the conditions, that makes the public feel the high cost of being sick. We frequently see in our journals articles on the high cost of being sick. But until we have sickness, requiring nursing care and hospitalization, we cannot appreciate the patient's point of view. First of all, the increased cost of being sick is not due to the doctor raising his fees, for the doctor's fees have not increased with his higher cost of living. Surgical fees are even lower in all branches than before the war. Where does the cost then come in? The cost of hospitalization has markedly increased, due to the following—suppose the doctor brings in a clean appendix, or strangulated hernia, and does not state that all the laboratory procedures necessary in the case have been taken care of, and no special nurse is required on the case. The patient will have all of those unnecessary frills, so that in short, the hospital bill will be twice what it should have been. It is a well known fact that the average medical and surgical case does just as well and even better with routine hospital care. That the patient in the smaller hospital gets more in-

dividual attention than in the larger hospital. That the mortality in acute surgical cases, where time is a great element, for example, acute appendicitis and strangulated hernia, is much lower in the smaller hospitals than in the larger institutions, requiring the patient to be transported greater distances.

During the World War, medical men gave more gratuitous service than any class of citizens. During the war the mortality among their number was the highest of any class. Our country, state and national government ask and receive from us more gratuitous service than from any other class of citizens. At times it would appear that our national, state and county governments, and the public in general, believe that we must exist like the Prophet Elisha, who lived with the widow, whose barrel of meal and cruise of oil failed not until rain come upon the land. Yet following the war, the United States Government even gave training to some veterans in the mysteries of the cults, and have passed an act, whereby any veteran, rich or poor, is forever entitled to free medical treatment and transportation to the hospital, whether his illness arose out of the service to the nation or not. Nobody will deny the right of a war veteran to obtain from the Government treatment of a disease or injury occurred in his line of duty, but here Uncle Sam's obligations ceases, and any further medical aid is class legislature. It is the greatest eulogy ever written concerning Abraham Lincoln, namely, he had unlimited power but he never misused it. The American Legions apparently is developing unlimited political power, and I regret that this early in the stage we cannot say of them they never misuse it.

But let us now drift over to the field of teaching medical science. The literature of medicine today is in a similar chaotic condition to that time when Osler came on to the medical horizon and he marshaled his facts and without non-essential padding wrote in simple English a one volume medicine that is still classic. We need another encyclopedic mind like Osler's to do the same for our present day medicine. We show a marked tendency in modern medical teaching to get away from the lecturer, but on account of the present day literature being so voluminous on account of non-essential padding, real teachers and lecturers are required more than ever to debunk it and present the essentials of the various subjects to the student mind. Our pre-medical requirements regarding

modern languages is a grave waste of time, for no medical student, unless of the nationality in question, ever remembers them in his medical work, either as a student or after graduation. It is fitting and proper to stress all the scientific subjects that are applicable to medicine, going deeply into the same. It is a useless waste of the medical student's time to require him to go into those parts of the sciences that will never be applicable to medicine. It would be much better to put more time on internships in hospitals. The reason why the young M.D. does not wish to locate in the smaller towns is that he has not been grounded in the non-laboratory methods of diagnosis, and cannot make a diagnosis without their aid. Dr. Wm. Goldie, of Toronto, and other consulting clinicians, say that in 95 per cent of all their cases they arrive at the proper diagnosis without X-ray or laboratory procedures. Inspection, palpation, percussion, and auscultation are becoming lost arts with the young medical graduates. We should still teach them as the late Alexander Bernays aptly put it, "that they may have eyes that feel and fingers that see."

In conclusion, as to the future of medicine, let us divide medical men into three classes, gen-

eral practitioners who still are doing 95 per cent of the medical work, the real specialist and the psuedo specialist. With the real specialist, who first engaged in general practice and became more apt in certain lines, and then took intensive training in that, we have no quarrel, but with the psuedo specialist who advertises as Dr. So and So Specialist, but does not state what that specialty is, but represents, of course, his being a specialist in whatever the patient consults him about, and his charges will be according to the diagnosis of the patient's financial condition. The two first classes will last. The psuedo specialist will go as all do who do not play the game fair. Never were the prospects of the good well-rounded medical man better than they are today. Permit me at this time to thank you for the honor conferred, as your immediate past president. I trust that I have bored none of you and pray I have awakened some of you. I am sure if you will give as much thought and attention to the problem above mentioned as I have you will put your shoulder to the wheel and make the world a better place to live in and the medical profession occupy once more that highly honored position where the public in full confidence looks up to the physician. I thank you.

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BRONCHOGRAPHY—THE PASSIVE TECHNIC

BY F. H. COOLEY, M.D.

REDFIELD, SOUTH DAKOTA

Bronchography, in order to be a useful procedure, must be of such a nature as to be carried out without the technic being unpleasant to the patient or difficult for the physician. Heretofore, because of the difficulty of its administration, it has been a relatively infrequent diagnostic procedure. The "passive" technic is very simple and requires no special training. Any procedure which is not simple, manifestly will be limited to specialists in that field. With the passive technic bronchography can be carried out by anyone who has access to a fluoroscope. Even though it is desirable to have a bronchoscopic examination in a case in which a bronchography is being done, it is frequently impossible to carry it out, either because a bronchoscopist is not attainable or the patient's condition will not stand such a procedure. It is because of the importance of bronchography to the pulmonary system that I am reviewing the passive technic at this time.

PHYSIOLOGY

In order to have a clear conception of the technic involved in the passive method, the physiology of swallowing will be reviewed. The act of swallowing may be divided into two phases, a voluntary and an involuntary one.

The first phase consists of the passage of the bolus of food through the isthmus of the fauces, that is the opening lying between the anterior pillars of the fauces. This phase is voluntary. As the food passes through the fauces afferent fibers to the center of deglutition in the medulla are stimulated, with the resulting execution of passage of food from the fauces through the pharynx into the esophagus. This phase is involuntary and during its execution the following incidents occur: there is a contraction of the mylohyoid and hypoglossi muscles, shooting the bolus of food through the pharynx; the pharyngeal muscles likewise contract helping to force the food into the esophagus; the upper esophageal orifice, which normally remains tonically contracted, is relaxed by an inhibitory reflex, allowing the food to pass into the esophagus; the larynx is elevated beneath the base of the tongue and the epiglottis is depressed over the larynx, thus preventing the entrance of food into the larynx. By interrupting this reflex



Fig. 1. Bronchography of right lower lobe: cylindrical and saccular dilatation of the bronchi in an advanced case of bronchiectasis.

arc, either on the sensory or motor side, the above phenomena do not occur.

In executing the passive technic a sensory anesthesia of the anterior pillars of the fauces is produced, thus abolishing the reflex act which produces swallowing. The mylohyoid, hyoglossi and pharyngeal muscles do not contract, the larynx is not elevated and the upper esophageal orifice remains contracted. Any substance entering the pharynx under these circumstances must enter the only remaining orifice, which is the superior laryngeal.

TECHNIC

The patient is asked to brush his teeth well before reporting for the bronchoscopy. No preliminary medication is necessary. After cleansing the mouth with an antiseptic mouth wash the anterior surface of the anterior tonsillar pillars is swabbed with a ten per cent solution of cocaine. The swabbing is continued until the swallowing reflex is abolished. As soon as the larynx remains immobile upon attempted de-

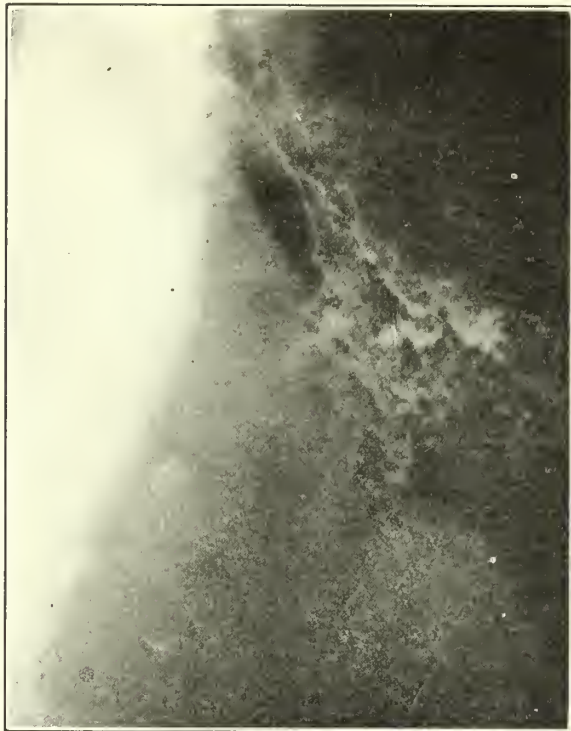


Fig. 2. Incomplete filling of left lower lobe showing outline of dilated bronchi.

glutition the anesthesia is complete. Usually about three or four swabbings with the ten per cent cocain solution are necessary.

Following this the patient is given four c.c. of a three per cent novocain solution and instructed to tip the head back, protrude the tongue, lean toward the side to be filled, pour the solution on his tongue and breathe naturally. In this way the solution is aspirated into the lung to be scoped and the normal cough reflex is abolished or diminished.

Following this procedure the anterior pillars are again swabbed with the cocain solution and the patient is placed behind the fluoroscopic screen. The anesthesia from the cocain solution only lasts a couple of minutes, and that is why it is necessary to make an application just previous to placing the patient behind the fluoroscopic screen. The patient is then given ten c.c. of the iodized oil which he places on his tongue and aspirates into the tracheobronchial tree the same way the novocain solution was aspirated. The lobe filled depends upon the side toward which the patient is leaning. With the patient in the upright position the lower lobes become filled. If the patient leans to the right the right lower lobe fills.

After the ten c.c. of oil has been aspirated, the patient is instructed to expectorate the saliva

which has accumulated in his mouth and to take the other ten c.c. of oil and aspirate it in the same manner. Following the introduction of the twenty c.c. of oil a stereoroentgenogram may be taken. The diagnosis, however, should always be made from the fluoroscopic examination. X-ray plates should only be used for confirmation, because the iodized oil may be aspirated into the alveoli within a very short time after the introduction of the oil, and a haziness of the lung field obtained which may obscure the outline of the bronchi, so that a dilatation may be overlooked.

INDICATIONS

A. Diagnostic. Bronchography may be a useful diagnostic procedure in determining the following conditions:

1. Bronchiectasis. In advanced cases it is not necessary as a means of diagnosis but it is valuable in giving us the extent of involvement. It is invaluable, however, in the diagnosis of early bronchiectasis. It is likewise useful in differentiating this disease from tuberculosis in certain cases. However, it must not be forgotten that a tuberculous bronchiectasis may occur.

2. Tumors of the bronchi.

3. Strictures of the bronchi.

4. Bronchopleural fistulae.

5. Following the collapse of a lung, the degree of collapse may be ascertained.

6. The relationship of foreign bodies in the lung parenchyma to the bronchi may be determined. In this way it can be ascertained whether the foreign body may be removed through the bronchoscope or whether a thoracotomy will be necessary.

7. Chronic cough, chronic bronchitis and recurrent attacks of acute bronchitis. Ninety per cent of these cases show a definite bronchial dilatation (Ochsner, New Orleans).

B. Therapeutic. The introduction of iodized oil into the tracheobronchial tree is of distinct therapeutic value in cases of bronchiectasis and chronic bronchitis.

SUMMARY

The "passive" technic is an ideal procedure for bronchography. It is simple, does not require any special instrumentation, and is neither harmful nor unpleasant to the patient.

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MINNEAPOLIS, AUGUST 1, 1930

THE MINNESOTA STATE MEDICAL ASSOCIATION MEETING

Those who attended the Minnesota State Medical Association meeting at Duluth the first three days of the week of July fourteenth, heard a great program and those who missed the Duluth meeting missed a great deal in the way of medical literature as well as the delightful climate and a jolly good time in a wonderful hotel. The attendance was very good, as they had between 300 and 400 guests at the banquet on Tuesday evening, both men and women, and the Ladies' Auxiliary had a session which lasted throughout one entire day.

Dr. Olin West, the secretary of the American Medical Association, favored us with his presence and was a very welcome visitor. He complimented the society on its actions and what it had accomplished.

It was a great pleasure to see Dr. and Mrs. W. J. Mayo, of Rochester, and Dr. and Mrs. Morris Fishbein, of Chicago, who motored up on the Sunday preceding the meeting. Everyone knows by this time that Dr. Fishbein is the editor of the *American Medical Association Journal* and *Hygiea*, official magazines of the American Medical Association.

One of the outstanding features of the meeting was the decoration of Dr. R. E. Farr, of Minneapolis, for his work in local anesthesia. He is probably as responsible as anyone for the progressive work done in local anesthesia not only here but in the surrounding country, which is the forerunner of other advancements which will come as men are prepared for them.

It is rather hard to take in all the meetings of the state society and the editor, for one, was very sorry he could not attend the meeting held in the English Room of the Hotel Duluth to hear Mrs. J. D. Lyon, of Minneapolis, speak on "The Doctor's Wife."

Dr. W. I. Lillie, of Rochester, read a paper on "The Problem of Disease of the Paranasal Sinuses" (lantern slide demonstrations). Dr. A. T. Laird, of Nopeming Sanatorium, read a paper on "Some Clinical Features of Chronic Pulmonary Fibrosis," showing lantern slides. Dr. A. L. McDonald, Dr. L. R. Gowan, Dr. W. N. Graves, and Dr. F. J. Hirschboeck, representing the Duluth men, participated in the meeting and presented papers. Dr. F. N. Knapp, of Duluth, read a paper on "The Economic Importance of Squint in Children and Its Effect in After Years," and emphasized the point that parents should see to it that children with squint have expert attention in early life, for if this is neglected until the child goes to school it will probably result in definite impairment of vision with a greater risk of the possibility of eventual blindness.

"Pelvic Fractures," was the title of a paper read by Dr. O. W. Parker, of Ely, in which he remarked that such fractures were a common occurrence in women and children as well as men, due to the increasing number of transportation accidents. Dr. W. H. Goeckman, of Rochester, read a paper on "Recurrent Lymphangitis," and said that lymphangitis is the name of another uncomfortable infection that may come from infected teeth, sinuses, or tear sacs; the writer is mighty glad that Dr. Goecerkman explained this or he would not have known what he meant. "Use of Tannic Acid in Burns of Children," by Dr. E. C. Davidson, Detroit; "Common Foot Disorders," by Dr. A. E. Flagstead, St. Paul; "The Physician's Coöperation in Public Health Administration," by Dr. F. E. Harrington, Minneapolis; "Clinical Hypothyroidism," by Dr. Frederick H. K. Schaaf, Minneapolis; "Encephalitis," by Drs. W. H. Hengstler and G. N. Ruhberg, St. Paul; "Skin

Diseases," by Dr. H. E. Michelson, Minneapolis; "Hypertension," by Dr. N. M. Keith, Rochester; and "Synopsis of Treatment of Chronic Arthritis," by Dr. George A. Williamson, St. Paul, were additional papers read before the Association.

Dr. Boyer, of Duluth, who held the position of president of the Association this year, conducted the meeting wonderfully and deserves much credit for its success. A great deal of work must be done to insure the success of such meetings as this. Dr. L. L. Sogge, of Windom, who was elected president for the incoming year, is a fine fellow; the editor knows of no one who would be more popular than Dr. Sogge for that position. And putting such men in office will keep the other men on their toes keeping up with them. The writer, one of those present at the House of Delegates meeting, saw the roomful of delegates on Monday afternoon; they seemed to him a fine lot of men; they conducted their business in a very businesslike manner and they would be a credit to any society of any kind. There is much business to be carried on, as each section has to be reported on, then discussed and voted on before the report may be accepted.

New officers were elected, as is usual at the state meeting, on the final day. Dr. W. H. Condit, of Minneapolis, was elected vice-president; Dr. Owen W. Parker, of Ely, was chosen second vice-president; Dr. E. A. Meyerding, of St. Paul, was re-elected secretary; and Dr. A. G. Schulze, of St. Paul, was chosen treasurer. The various officers were widely and wisely chosen from different parts of the state, giving a more general representation. Dr. G. S. Wattam, of Warren, presided over the installation of officers and officiated during the ceremony. And Dr. E. A. Meyerding, the secretary, certainly had his hands full, for we saw him there Sunday evening getting ready for the meeting, and he was there and on the job until late Thursday night as he had charge of the registration, the exhibits, and the incidental business of the occasion.

Dr. Lorenze Boehler, the Viennese physician, who was the house guest of Dr. Emil S. Geist, of Minneapolis, the president of the Minnesota Academy of Medicine, arriving in Minneapolis on the Friday before the meeting and motoring up to Duluth on Sunday, July thirteenth, stopping on the way up to visit some friends and arriving in Duluth Sunday evening. Dr. Boehler remained through the entire meeting, and made

a very favorable impression on the men. He standardized his work very convincingly. Dr. Geist wrote an article on the Boehler treatment of fractures for the January 15th issue of the JOURNAL-LANCET, and for further elaboration we refer you to that article.

It was a splendid meeting, and those of the medical profession who attended were well repaid for their efforts.

NEWS ITEMS

Dr. H. Mark, formerly of the Ancker Hospital, St. Paul, is now located at Akeley, Minn.

Dr. H. K. Kemp, formerly located at Powers Lake, N. D., has moved to Flaxton, N. D.

Dr. Charles H. Mayo, Rochester, the world famous surgeon, celebrated his 65th birthday last month.

Dr. G. B. Irvine, Lake City, Minn., has moved to Tempe, Arizona, where he is to continue in general practice.

Dr. J. O. Lee, formerly at Canton, S. D., has moved to Wessington Springs, S. D., where he will continue general practice.

Dr. L. R. Peck, a recent graduate of the University of Minnesota has opened offices for general practice at Hampton, Minn.

Dr. John Hartzell, Minneapolis, will wed, in September, Miss Esther, daughter of Dr. and Mrs. Charles A. Mayo, Rochester.

Dr. J. L. Tavenner, St. Paul, has moved to Waseca, Minn., and is now associated with Dr. F. A. Swartwood in general practice.

Dr. Norman Baker, Fergus Falls, Minn., has become associated with his father, Dr. A. C. Baker, of that city, in general practice.

Dr. A. J. Janis, a recent graduate of the University of Michigan, has become a partner of Dr. James Doyle, at Rapid City, S. D.

Dr. R. E. Scammon, professor of anatomy at the University of Minnesota, has been appointed to the same chair at the University of Chicago.

Dr. Kellogg Bascom has left the General Hospital, Minneapolis, to accept a position on the staff of the Northwestern Clinic at Minot, N. D.

Dr. and Mrs. A. J. Heimark, Fargo, N. D., are spending a month visiting some of the leading eastern cities. They are making the trip by auto.

Dr. and Mrs. J. E. Soper, Minneapolis, are on a three months trip abroad. They will visit many of the battlefields and graves of the American soldiers.

Dr. L. J. Tiber, who has been practicing medicine in St. Paul for the past 15 years, has accepted a position to teach at the University of Southern California.

Dr. H. T. Petraborg, graduate of the University of Minnesota, class of 1829, has become associated with Dr. W. R. Humphrey in general practice at Stillwater, Minn.

Dr. Edward Brastrud, F. A. C. S., Warren, Minn., was elected to membership in the American Urological Society, at the annual meeting recently held in New York City.

Dr. T. L. Boehler, the noted Vienna surgeon, set a man's broken leg at one of the sessions of the Duluth meetings, so that he was able to walk in 30 minutes after the operation.

Dr. A. T. Laird, superintendent of the Nopeming, Minn., Sanitarium, was again elected president of the St. Louis County Public Health Association, and Dr. G. J. Ferriera, Duluth, secretary.

Dr. Karl Meyer, Chicago, associate professor of surgery at Northwestern University, was among the leading speakers at the annual meeting of the Minnesota State Medical meeting last month.

The Clay-Becker Medical Society held their annual mid-summer meeting at Pelican Lake, Minn., last month. Dr. Owen Wangenstein, of the University of Minnesota, was the principal speaker.

Dr. Wm. C. MacCarty, Rochester, Minn., was recently elected president of the Rotary Club of that city. Nearly all the leading members of the medical profession of that city are members of the club.

Dr. N. G. Mortensen, St. Paul, has been elected president of the Northwestern Medical Officers Association. The membership is made up of the worlds war "medics" who are in the 7th corps area.

Dr. Leo. G. Rigler, Minneapolis, was the winner of the medal presented by the Southern Minnesota Medical Association for the best scientific exhibit at the state meeting held at Duluth last month.

The Southern Minnesota Medical Association will hold its annual meeting at Mankato, on August 25th. A very attractive program is being arranged and a large attendance will be present to take part in same.

Dr. Robert Emmett Farr, Minneapolis, was awarded the 1930 Noble medicine prize for his achievements in the advancement of local anesthesia, by the Minnesota State Medical Meeting held at Duluth last month.

Nearly 400 physicians and dentists were at Fort Snelling last month participating in the annual meeting of the reserve officers of the medical department. Colonel G. A. Skinner, Omaha, was the senior instructor.

The Park Region County (Minn.) Medical Society held their annual summer meeting last month. Dr. W. T. Peyton, University of Minnesota, presented a paper on "Surgery and the Treatment of Tuberculosis."

At the annual meeting of the Wabasha, Minn., County Medical Society held last month, Dr. E. C. Bayley, Lake City, was elected president, and Dr. W. F. Wilson, secretary. The next meeting will be held at Lake City.

Dr. E. W. Thuerer, Billings, Mont., widely known throughout the state, died recently at the age of 50 years. He was suddenly stricken with septicemia, but with many blood transfusions they were unable to save his life.

Six thousand physicians and surgeons from the United States and Canada, as well as from many foreign countries, will attend the meeting of the Post-graduate Medical Association of North America, to be held in Minneapolis, October 20-24.

A meeting of leading physicians and surgeons was held at Bottineau, N. D., recently and the Border Medical Association was organized with Dr. John Thornton, Deloraine, Man., president, Dr. A. R. McKay, Bottineau, N. D., vice president, and James Rawlson, Melita, Man., secretary.

The American Hospital Association requests hospitals and all others who participated in the celebration of National Hospital Days this year to send in their material for the contest for award to be given for the best demonstration of display. The material will be displayed in the booth at the convention in New Orleans.

Officers of the Minnesota State Medical Society for the coming year are: President, Dr. L. L. Sogge, Windom; first vice president, Dr. W. H. Condit, Minneapolis; second vice president, Dr. O. W. Parker, Ely; secretary, Dr. E. A. Meyerding, St. Paul; treasurer, Dr. A. G. Schulze, St. Paul. The 1931 meeting will be held in Minneapolis.

The Minnesota Society of Internal Medicine has again offered a prize of \$250 to be awarded for the most worthy research work by a Minnesota physician, exclusive of members of the society. These should be submitted before October 1, 1930, to Dr. E. T. F. Richards, Hamm Building, St. Paul, chairman of the award committee. Previous winners of the prize are Adolph Hanson, Faribault, 1927; Max Seham, Minneapolis, 1928, and Anderson C. Hilding, Duluth, 1929.

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Wednesday morning over Station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters). Speakers: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. The program for the month of August will be as follows: August 6th, Poison Ivy; August 13th, Knock Knees and Bow Legs; August 20th, Cause of Fever; August 27th, Cancer of the Stomach.

Dr. Fred Ziegler, of Elmore, Minn., was arrested recently for practicing medicine without a license at Springfield, Minn. Dr. Ziegler, a man sixty-one years of age, has been engaged in bleeding and cupping for the past twenty-six years in Faribault County. He has no medical education except a correspondence course in Chiropractic. He claims to have a "Degree of Doctor of Naturopathy." Dr. Ziegler entered a plea of guilty before the Hon. A. B. Gislason, Judge of the District Court at New Ulm, and

was fined \$500. Dr. Ziegler paid the fine and he was warned that he would have to refrain from practicing in the future or he would be dealt with more severely. The imposing of substantial fines as was imposed by judge Gislason in this case will go a long way in eradicating quacks, fakers and unlicensed practitioners. The Court in no uncertain terms informed the defendant that such practices would not be tolerated in this state. Judge Gislason is to be commended not only by the medical profession but by the public for his firm stand on these matters. The matter was handled by Mr. Briston on behalf of the State Board of Medical Examiners and splendid cooperation was received from T. O. Streissuth, County Attorney, and Sheriff J. J. Reitter of Brown County.

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THE JOURNAL-~~L~~ LANCET

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TRAUMA AS A FACTOR IN THE PRODUCTION OF CERTAIN UROLOGICAL CONDITIONS*

BY HARRY CULVER, M.D.

CHICAGO, ILLINOIS

In a necessarily short discussion of a subject which deals directly or indirectly with several pathological conditions of every organ of which the genito-urinary tract is composed, I wish to confine my remarks to a few of the most important conditions met with in this connection, and only those presumably resulting immediately from direct trauma. This naturally eliminates long, and, as yet unsettled, arguments relative to trauma as a factor in localization of tubercle bacilli in the kidney, or whether such trauma causes an exacerbation of a lesion previously existing. This same holds true for pyogenic infections of this structure. The interesting question of the formation of urinary calculi, in patients suffering from fractures from any cause which necessitates their confinement to bed for long periods, is outside the scope of this discussion, as is also the probability of malignant neoplasms of the kidney or testicle being the result of a direct or imaginary blow.

I shall take up, therefore, but two conditions resulting from trauma, these to be given, not necessarily in their order of importance, but in their order of frequency as seen in my services

at Cook County and St. Luke's Hospitals, Chicago.

The first condition under consideration is injury to the urethra, caused usually by one of two methods, that is, straddle injuries of the perineum, and urethral injuries as a complication of fractured pelvic bones.

Straddle injuries of the perineum may be of such a nature that the bulbous urethra of the adjacent part of the membranous urethra is merely contused, resulting in mild urethral bleeding and some narrowing of the channel from edema, without definite rupture of any part of the lumen. Such cases frequently recover completely without surgical interference, but even these should be carefully watched for the production of traumatic anterior stricture for at least a year following the accident. In more severe perineal injuries there may be marked laceration of the bulbous urethra with surrounding hematoma, marked urethral bleeding, and, if not properly handled surgically this may soon go on to superficial urinary extravasation. This severe group should have an external urethrotomy as soon as diagnosed, in order to prevent further bleeding, infection and extravasation, and, above all, to conserve as

*Read before the Great Northern Railway Surgeons Association, Grand Forks, N. D., June 20, 1930.

much as possible of the injured urethral mucosa. I have not seen a complete severance of the urethra from this type of injury, but such is possible, and if found at the time of the urethrotomy the proximal and distal ends should be brought together at a single point on the roof of the canal; careful complete approximation is not necessary.

Much better do an unnecessary urethrotomy in border line cases, than allow an operable case to go untouched. This fact was thoroughly impressed upon me recently when a young man was admitted to my care after a three month stay in another hospital where he had been taken immediately following a straddle injury. When first seen, under my care, he had had no surgical interference but had instead a slough of the bulbous urethra over an inch long and a loss of a much wider area of the superficial perineal tissues, multiple fistulous tracts extended on either side of the scrotum up to the Poupart's ligament. Fortunately the roof of the urethra was intact throughout, thus giving a splint for urethral repair. A cystotomy was first done to divert the urinary stream and a series of plastics was done on the urethra, requiring an additional nine months hospitalization before he was closed. He now takes a No. 26 F. sound readily and has perfect control with no infection of his urinary tract. The success in this case may rightly be given to the remarkable coöperation and resistance of the patient.

Urethral injuries associated with fractures of pelvic bones are probably more common and infinitely more serious, both as to morbidity and mortality, the mortality feature being due as a whole or greater part to associated internal injuries when present, and to improper early management of the urethral condition.

Since the mechanism of this urethral injury is entirely one of anatomic relationship, it can be more readily understood by having an understanding of the gross anatomy concerned in this mechanism. (Slides shown here.)

Discussing the actual mechanism as well as the methods of immediate surgical management, together with the necessity of prolonged urethral dilatation to prevent production of traumatic urethral stricture, emphasis should be made of one's correct visual impression of this condition, that the real pathology is above the urogenital diaphragm and the condition should always be approached through a suprapubic extraperitoneal incision. To be sure, in some instances, this approach will not suffice and a secondary

perineal urethrotomy incision will be necessary to reëstablish local conditions so that repair will result in a functional structure. My experience has taught me that perineal approach alone is never sufficient.

The problem of traumatic conditions of the kidney is recognized as one of the most important, because of the serious pathology that may develop from hemorrhage, extravasation, and infection, and because of the future economic welfare of the patient, as it gives rise to high morbidity, through mistaken diagnosis and either too conservative or too radical treatment.

Taking all grades of renal injury into consideration they are relatively common, but the more severe injuries such as rupture of the parenchyma, pelvis, ureter, or main blood supply are not common, although more recent literature, since the advent of the automobile, must persuade us that there has been a marked increase in this type of injury and that it now cannot in any sense of the word be called uncommon. (1) Kidney injuries may be caused by direct trauma, the blow driving the kidney against the lower ribs or the transverse processes of the vertebrae. (2) Indirect trauma such as is found after a man in falling, lands on his feet. (3) Muscular action producing abrupt flexion. (4) Spontaneous rupture, where there has been no trauma, which condition always occurs in diseased kidneys, usually stone, hydronephrosis or tuberculosis.

It is a well known fact that the degree of trauma does not determine the extent of injury, since an apparent very minor injury may result in complete rupture of the kidney, while severe local trauma may cause no kidney injury at all or at most an intracapsular contusion with no serious sequelæ. This paradox is best explained by the experimental work of Kuster, whose conclusions were that ruptures were the work of hydraulic force. In other words a kidney, the pelvis of which is distended with urine and is just at the height of peristaltic emptying, is much more susceptible to severe rupture from minimum trauma than one with the pelvis emptied.

Local pathology of injured kidneys fall in one of these classes:

- (1) Tear of fatty capsule.
- (2) Subcapsular hemorrhage.
- (3) Slight contusion or laceration of the parenchyma.
- (4) Complete pulpification of the kidney.
- (5) Partial or complete tearing of the pelvis, ureter, and blood vessels.

(6) Rupture of the peritoneum.

(7) Associated injury of intraperitoneal viscera.

Whether an injury will turn out to be a serious or mild one depends of course on its extent and location. Thus a subcapsular rupture, after a few days of pain in the loin, associated with hematuria will entirely recover, whereas a total rupture with the tear of a large blood vessel may soon exsanguinate the patient; this result is almost certain to occur should there be a peritoneal tear associated, which will eliminate the only chance such a patient has, that is, the formation of perirenal hematoma giving sufficient extrarenal pressure to partially control or stop the bleeding.

The cardinal symptoms of renal injury are pain, tumor and hematuria. To this may be added the condition of shock.

There are no sensory nerves in the kidney substance proper, hence pain as a symptom may be misleading as to the degree of injury. The greatest pain is experienced in the relatively benign subcapsular break in the parenchyma, the pain being due to pelvic and capsular distention, while a similar lesion with a break in the capsule causes very little or no pain until hematoma is formed, which causes distress from mechanical pressure. Blood clots passing down the ureter elicit a colicky pain in some instances. Tumor is due to hematoma and urinary extravasation, and varies in extent and location, but always is first noticed in the perirenal region, from which point it may extend downward into the true bony pelvis.

While hematuria is a fairly constant symptom, its absence does not rule out the possibility of any grade of renal injury. Clots may plug the ureter, the ureter may be torn completely off, there may be marked damage to renal vessels, or even severe ruptures of either pole of the kidney may occur and no blood be found in the urine. Also hematuria may occur early or late, it may stop and recur several times. I desire to emphasize here that on the basis of a single examination the absence of blood in the urine means nothing.

Shock may be the outstanding feature or it may be absent, or again it may be transitory.

Secondary hemorrhage has occurred many days following the injury, when the patient has apparently made a complete recovery. This complication has been seen both in operated and unoperated cases.

Suppuration may, of course, follow any time

after the injury, and this complication is frequently an indication for surgical intervention many days after the spontaneous control of hemorrhage. A collection of clotted blood either within the true kidney capsule or in the perirenal tissues of course may readily be absorbed, but such accumulations naturally make for infection which usually necessitates surgical drainage and even nephrectomy. With this complication most frequently resulting from hematogenous infection, it can and undoubtedly does too frequently result from ascending infection from the lower urinary tract. Thus the question of instrumentation either for diagnosis or treatment confronts us.

It seems to be a good safe general principle to follow, that not even bladder catheterization be done, unless imperative for the removal of clots, and in rapidly failing cases where immediate surgery is indicated, a bladder observation may be made to insure the presence of the other kidney. This information may have a considerable influence on the surgical procedure to follow.

Ureteral catheterization early, I believe to be absolutely contraindicated. While it is quite generally agreed that the ureteral catheter, even with ordinary careful technic cannot infect a normal pelvis, under these circumstances I would much prefer a kidney exploration surgically.

In this connection I will briefly cite the experience of a nineteen year old boy, who sustained a kidney injury in an automobile accident and was taken to a hospital in a small city in severe shock, from which he soon rallied. He then had severe, constant pain over the right kidney region and presented macroscopic blood in the urine. He progressed nicely for a week, the pain subsided, the hematuria almost stopped, and the case was running almost an afebrile course, when his physician for some unknown reason decided to determine the extent of injury by making a pyelogram. The result was a beautiful picture of an intracapsular laceration, there being a definite slit in the parenchyma which connected the lower major calyx with the true capsule. Almost immediately following this examination the patient had a chill followed by a fever of 105° F. There was an exacerbation of the pain in the loin, and this condition of sepsis continued for a week, when with consultation it was deemed advisable to do a nephrectomy. The kidney presented the trauma visualized in the pyelogram, also a generalized suppurative pyelonephritis. The boy recovered, but has only one kidney instead of two, which he undoubtedly

would have had had his doctor been less ambitious.

Following the absorption of a considerable amount of blood in cases of spontaneous recovery there may be considerable damage done by the densely organized clot. This has been found to compress the kidney proper, pelvis or upper ureter and produce any one of many later pathological conditions depending upon the site of compression. The chief symptom is pain, and here pyelography may be a real help.

This sequela, however, is relatively uncommon, and explains only a very small fraction of the various aches and pains of which some of these patients are prone to complain; however, it should be kept in mind.

In the treatment of traumatic lesions of the kidney, the point uppermost in the surgeon's mind is to conserve two functioning kidneys. The majority of such injuries will get well by expectant treatment. Let the bleeding serve as a guide; when there is a steady rise in the pulse

rate together with a fall in hemoglobin and blood pressure, there is urgent indication for surgical intervention. What is found should determine the procedure.

If the bleeding can be controlled by a pack the injury is not great; if the fragments can be approximated by suture, then suture, pack, and drainage are indicated. If the kidney is so torn that bleeding is uncontrollable, if the large vessels are torn, if the pelvis is severely torn, or if the ureter is entirely separated, there is nothing left but nephrectomy. In all surgical instances the peritoneum should be carefully inspected for tears.

The modern trend is conservatism. Operate early only when conditions absolutely demand it; then conserve as much kidney tissue as possible. Keep in mind later complications which may demand surgery, such as perinephritic abscess, pyonephrosis suppurative pyeronephritis and perirenalesclerosis.

REASONS FOR THE PREVENTION OF COMMUNICABLE DISEASES AND EFFECT UPON A COMMUNITY*

By WILL H. MOORE, M.D.

VALLEY CITY, NORTH DAKOTA

Mr. President: Members of the North Dakota Health Officers Association and Guests:

The late science of epidemiology is indeed far removed from the teachings of the early Christian era and even down as late as the eighteenth century; but much of our real progress has taken place since the discovery of the anthrax bacillus and the beginning of the science of bacteriology.

Romantic and inspiring indeed are the writings of the noble members of our profession who have devoted their lives with untiring zeal to the many problems connected with the study of epidemiology. We should be willing as physicians, and assuredly as members of this group, to use to the advantage of our patients and the public at large the information so dearly paid for.

It is a privilege to serve our patient to the best of our own ability and to strive for his welfare, but it is our duty also to fight for the rights of the public, and many times to insist that our patient give up some of his supposed personal rights in the name of community interests.

In 1925 it was stated by a Senior Surgeon of the U. S. Public Health Service, C. C. Pierce, (it may surprise some of you as it did me) that in addition to the detailed data from twenty states there are available other general data to show that smallpox remains the most widely distributed plague in the world. During the year ending June 30, 1924, 149,550 cases of smallpox with 22,346 deaths were reported by health officers throughout the world to the U. S. Public Health Service. One fifth of all these cases occurred in the United State, 45 states reporting a total of 30,771 cases. Aside from

*Read at the North Dakota Health Officers Conference, held at Grand Forks, North Dakota, May 6 and 7, 1930.

China and India, during 1923 only three countries of the world where vital statistics are kept and available exceeded the United States in their smallpox rate,—Switzerland, Russia and Greece.

Rosenau says: "The experience of over 100 years offers convincing proof of the pronounced differences in the morbidity and the mortality from smallpox among the vaccinated and the unvaccinated."

You will perhaps recall that smallpox was very prevalent in the United States during the year 1924, and in Detroit, Michigan, the number of cases and virulence so increased, that during the period from March 16 to June 1 there were in that city 795 cases with 105 deaths. One very severe epidemic occurred in the city of Minneapolis in December, 1924, where in 31 days there were 373 cases and 129 deaths.

The Secretary of the Michigan State Board of Health stated that it cost Michigan \$150,000 a year to take care of indigent smallpox patients and to protect the unvaccinated.

In a circular issued by the Kentucky State Board of Health, it is stated that smallpox during a period of a few years had cost county and city treasuries over a half million dollars actual cash, with an estimated loss from interference with business and travel of over one and a quarter million, and that judiciously expended this would be more than enough to keep every person in Kentucky vaccinated for a generation, so that the existence of anything but an imported case of smallpox would be an impossibility. The quotation of the many statistics from the late serious outbreaks of this disease would only weary you, but I should like to quote the Health Commissioner of the City of St. Louis, who in an address late in 1924 stated that it cost the city more than \$150 to care for every case of smallpox, but to prevent a case of smallpox by means of vaccination cost but four cents. We are here making no attempt to figure out the immense economic loss to the community from the loss of the earning power of those so long ill with this disease. During a five year period ending with 1923, there were reported from Massachusetts 114 cases of smallpox, and from Michigan and California over 15,000 each. Massachusetts has a law requiring the vaccination of school children. In 1920 and 1921 over 17,000 cases were reported in the State of Illinois, with but 412 reported from Chicago. We must agree with this author (Pierce) when he says, "With evidence like this open to the public, it

is hard indeed to understand how anybody can have the temerity to try to discredit vaccination against smallpox."

I wish we, as practicing physicians, might realize that a negative vaccination does not necessarily mean immunity to smallpox. The Detroit data show that unvaccinated persons exposed to smallpox are six times as likely to contract this disease as persons having old scars even of more than five years duration. We must all admit that practically anyone may be safely vaccinated against smallpox. In Detroit, during 1924, there were 817,000 persons vaccinated without a death or serious accident. These vaccinations included those on persons ill with other diseases, new born babies and their mothers. The medical officers of the army and navy have vaccinated over six million persons; one man died during the course of vaccination, his death being due to pneumonia.

The great work done in saving and prolonging human life in this country we must mention. The average length of life has been increased from 40 years to 58 in two generations and the rate is increasing now. This is not all due to the lowered death rate for children, for reports show a real prolonging of life in the middle and later ages.

Vaccination and revaccination reduce the mortality of this disease to zero. In no army during the World War was smallpox other than a negligible factor in the mortality lists, and in the annual report of the Surgeon General for the year 1919, smallpox is not mentioned, and we fail to find evidence of a single death from this disease in our army or in any part of it.

Not only by sanitation, but by the putting into practice our knowledge of the various means of controlling the spread of disease, by the control of disease carriers and by immunization in these many diseases; by all these has the prolonging of life been accomplished. The arbitrary and unreasonable opposition to a measure so simply performed and yet so positive in its results is costing this country untold economic loss, an enormous morbidity and mortality, and the bitter enders, the antivaccinationists, are at the same time quite secure by the fact that the large proportion of the public have gladly accepted this slight inconvenience to become immune to this loathsome disease.

The words of a recent writer (Pierce) well express our feelings in this matter: "Every means of progress in prolonging human life has been contributed by those who know that vac-

ination does prevent smallpox, and not one single advance in sanitary science, nor any useful suggestion for the purpose of prolonging human life and adding to efficiency, has ever been made by any opponent of this measure."

During the past few years we have learned a great deal about the communicable diseases in general, but there are few diseases about which we have more positive knowledge than has been given to us in the study of diphtheria.

For each of the seven years prior to the introduction of antitoxin (1887 to 1893), the number of deaths from diphtheria in each hundred thousand population in New York City was 145, whereas in the five years after the use of antitoxin became general, the number of deaths occurring yearly among each 100,000 people dropped to 63. In 1926 the death rate from this disease in the registration area of the U. S. had dropped to 7.5.

However, (and right here is the crux of our argument) analysis of 142 of the 158 forty-eight hour deaths from diphtheria in 1925 and 1926 admitted to the Willard Parker Hospital, New York City, shows the cost of delay in administering antitoxin and giving standard supervision and care. In 101 cases the parent delayed sending for a doctor, in 67 cases the doctor delayed in administering the antitoxin. Together there was an average delay of 2.5 days in the patients receiving the right treatment. A further reduction in the mortality of this disease seems impossible by reason of the delay in the giving of the proper treatment.

Now as to the question of scarlet fever: I have gone over and over very carefully the literature made available to me through the kindness of our own State Department of Health and the American Medical Association, and while there is an almost uniform agreement by all writers that every physician should feel the responsibility for the immunization against diphtheria and the vaccination for smallpox for every baby in his practice at the ninth month of age, we are confronted by some open disagreement and considerable pessimism with reference to the immunization against scarlet fever.

In an article by J. L. Jones, State Epidemiologist, Louisville, Kentucky, and John W. Armstrong, Physician and Health Officer, Berea College, Kentucky, we have a presentation of a scientific study made by the State Board of Health in conjunction with Dr. Gladys Dick, of the Scarlet Fever Committee, Chicago, on the control of scarlet fever at Berea. There was

a very extensive epidemic of this disease at the College in March, 1929. All the regular means of prevention and suppression of this epidemic were used, and many extraordinary things were done. Skin tests were made on every person connected with the College; on reading the skin tests, active immunization was started on all susceptibles, the percentage of whom out of 2308 persons tested was 21.7. The mild sore throats in this epidemic conferred immunity as well as did the typical cases of scarlet fever with rash. Active immunization of all susceptibles brought this epidemic under complete control within seven days. Among the 502 susceptible persons only 63 developed scarlet fever subsequent to skin testing and culturing; 54 of these developed before the second dose of toxin had been given. Of the 63, fifty-four had positive cultures at the time of skin testing. The administration of five doses conferred complete immunity in 97.1 per cent of the susceptible persons. The failure of this small number to become completely immunized is explained on the same basis as the failure of the disease itself to confer complete immunity in some individuals, a deficient immunity mechanism.

Their conclusions are worthy of our consideration.

"The results reported show that an epidemic of scarlet fever can be adequately controlled by application of the following means: 1. Nose and throat cultures on blood agar plates to detect infected individuals and carriers, with isolation and quarantine, and release of same, based on the results of such cultures.

2. "Skin tests to detect susceptible individuals.

3. "Active immunization of all susceptibles with the five graduated doses of scarlet fever toxin recommended by the Scarlet Fever Committee.

4. "Retests two weeks after the fifth immunizing dose, with the administration of a sixth dose to those who still react positively to the skin test.

"In the light of these findings it is unnecessary today for an individual to have scarlet fever."

The measures already made available by the State Board of Health will if followed out prevent the spread of measles and whooping cough, especially to the younger infants where the sequelæ are so fatal.

It is remarkable with what lightninglike activity these Boards of Health step in to surround and suppress an epidemic.

It has been shown that of late years the largest cities of the country have collectively the lowest typhoid death rate, about 5.8. The cause of this decline is largely due to the production of a safe water supply. Further, it has been shown by Dublin from a study of death rates among holders of insurance policies, that for the first two or three years after recovery from typhoid fever the death rate among these recovered people is more than twice the normal rate. Speaking of the reduction in the typhoid death rate as shown from the Chicago reports, Vaughan says: "If so good a result can be obtained without vaccination, there remains no great argument for the recommendation of enforcement of this procedure (vaccination for typhoid fever) in civilized communities."

Army typhoid. No soldier went from this country to France without the protection afforded by typhoid vaccination. The Surgeon General of our army in his annual report for the year ending June 30, 1919, makes the following statement: Civil War, 1961; Spanish War, 967; World War, 5, per 100,000. This for two year period. Total officers and men in army, 4,128,478; total cases of typhoid fever, 1529; total deaths from typhoid fever, 227. For every 100,000 men there were thirty-seven cases and five deaths from typhoid fever.

The prevention of all or of any of these communicable diseases will result in a still further reduction of morbidity and mortality and an incomputable gain economically for the homes which year after year receive a visitation of one or more of these diseases. Further, every community would have a lowered tax rate, for the number of public charges would certainly be reduced, and the public institutions erected and maintained for the unfortunate victims of these diseases would be less crowded. It is cheaper and more convenient to prevent than to combat contagion.

We feel that the continued demonstration of the success of prevention will in time convince the public of the dangers of their present position and the foolish waste of money, and will lead them to think in terms of community spirit.

At the opening address before the New York Tuberculosis and Health Conference, November 19, 1925, Dr. William H. Welch, Dean of the School of Hygiene and Public Health of Johns Hopkins University said:

"When a Koch discovers the tubercle bacillus;

a Banting discovers insulin for the relief of diabetes; a Von Behring an antitoxin for the cure of diphtheria, or a Park demonstrates the value of the toxin-antitoxin for the prevention of diphtheria, the world draws a long breath as if saying to itself, 'now we are rid of that terror which has haunted the human race for centuries.'

"It then straightway forgets and goes on its way, comfortably assuming, of course, that the great discovery or invention is being carried into effect.

"The actual facts are quite different. A few people, those of unusual initiative, or ample means, or who happen to be under the exceptionally alert physicians, or within the jurisdiction of exceptionally competent health officers, receive the benefits of the new discoveries, but the great mass of the human race will go on as before, and the death rate from these diseases will be reduced slowly and over long periods of time, unless the entire process is speeded up through the unified, intensive efforts of allied health agencies, public, private and voluntary."

For the control and prevention of the Venereal Diseases we are happy indeed to see going into force so far as possible the modified army and navy program. We must at least have a proper discussion of these diseases, and we must get before the public the fact that we can prevent and treat these diseases; we must have proper reporting by physicians of these cases and the following up of the source of the infection, and the insistence on constant and prolonged observation and treatment of the source as well as of the patient, including examination of contacts. Early diagnosis and efficient treatment of syphilis, with a long followup, and a mild and gentle treatment by the physician himself, with a long period of observation, in the case of gonorrhoea, will do much to prevent the dissemination of these virulent diseases and will prove of lasting benefit to mankind.

My feeling of respect and admiration for the men in the Public Health Service has again been raised by perusal of the literature on this subject, and I wish at this time to express my deep feeling of appreciation and gratitude to the men engaged in this service in our State Health Department. They have at all times co-operated with us and have indeed been an inspiration to some of us newer men who have entered this line of work

SIR JAMES MACKENZIE*

BY THOMAS ZISKIN, M.D.

MINNEAPOLIS, MINNESOTA

Cardiology has made great strides in the last thirty-five years, and no one has played a greater part in its advancement than Sir James Mackenzie.

He was born of an ancient Highlander stock on April 12, 1853, in the parish of Scone, whence his father, Robert Mackenzie, and his mother, Joan Campbell Menzies, had migrated shortly before his birth and settled on a farm. James was their third child and second son.

The romantic ardor of his race, that love of beauty which is a part of the Highland character, was thoroughly ingrained in young James. He loved life in all its manifestations, and the impulse to live greatly held him spellbound even as a youth. Romance, however, has but seldom seduced a Scottish lad from his work; on the contrary, it is usually the mainspring of effort.

James was diligent in his application to his beauty which is a part of the Highland character, school and later, at the age of twelve, at the grammar school at Perth. He did not, however, distinguish himself as a scholar, and once said of himself that he was considered a dunce in most of his classes, and that the subjects in which he did well were those in which his understanding rather than his memory were called into play. He could not understand why all teachers laid so much emphasis on the exercise of the memory and so little emphasis on the exercise of the reason. He could not see why an examination should be accepted as a final test of intellectual capacity. His powerful mind fretted in this atmosphere of routine and uninspired authority. At the age of fifteen he left school at his own request and with the reluctantly given consent of his father.

Returning home from school one night, Mackenzie came suddenly to the lighted windows of a chemist's shop in which great jars of colored water glowed with brilliance. He was so impressed by the play of the colors that he decided there and then that he would become a chemist and that he would enter that chemist's shop as an assistant. This was undoubtedly the most important decision of his life, for it led to his ultimate choice of medicine as a career, a career in which, later, he was to become famous.

He soon tired, however, of the chemist's shop and its long hours and desired to quit, but the persuasiveness of his mother quelled his impatience and made him realize the seriousness of the responsibilities he had undertaken, and so he decided to go on with his work in the chemist's shop. He devoted what leisure time he could command to reading and also wrote a novel and collaborated in a play. His contact with the doctors who came into the chemist's shop turned his thoughts to medicine. Here, he thought, was a learned profession, yet, a profession demanding a high degree of practical wisdom and a diligent exercise of reason. He did not, however, delve precipitately into medicine as soon as his apprenticeship ended, but took a position as a chemist in Glasgow for one year.

At twenty-one years of age, he went to Edinburgh to study medicine. At the University he again discovered the very difficulties which had driven him in the first instance away from school. He was face to face once again with the academic system which had once bestowed on him the ignominious title of "dunce." He was not taught how to study and had great difficulty in his early years in passing his examinations. In the clinical years of his course he began to make progress, for at last his reason had free play. In his last year at the University he actually won three medals. Even these medals failed to convince him that he was other than a very inferior kind of student, and although he felt a longing to devote himself to some of the branches of medicine concerned in research, yet he thought he was only suited for what he then considered the lowest place in the medical profession—a general practice. He applied for a resident post at the Edinburgh Royal Infirmary, and to his surprise was accepted.

After finishing his internship, he was persuaded by Dr. John Brown to come to Burnly and act as an assistant in the firm of Dr. William Briggs and Dr. John Brown. Brown had first met Mackenzie in the dissecting room of the medical school where he, Brown, was teaching anatomy. He did not regard his pupil as a dunce, but took an immediate liking to him and formed a high opinion of his ability.

When Mackenzie joined the firm of Briggs & Brown, he felt that all hope of shining in his

*A review of "The Beloved Physician, Sir James Mackenzie" by R. Macnair Wilson. Read before the Lyman-hurst Staff, Minneapolis, Minn., May 23, 1930.

profession had been abandoned. He knew that the general practitioners were the rank and file, the common soldiers in the army of healing. However, there was no spirit of resentment, as he believed that he was born to play a humble part and that the qualities of mind necessary to real achievement had been denied him.

Mackenzie began to interest himself profoundly in the skill of Dr. Briggs. He saw that Dr. Briggs depended for his "skill" not so much on the detection of signs and symptoms of disease as taught in the medical schools, as on the impression conveyed by the patient himself. It seemed more important, also, to Dr. Briggs, to know what was going to happen to his patient and how to prevent it. This was a new idea to Mackenzie and he pondered over it with ever increasing interest. He set himself to do his best for these people whom he was called on to attend. He studied and restudied the notes he had taken of the lectures at Edinburgh. He turned back to his textbooks and although they were full of descriptions of severe diseases, yet they had very little to say about the every day troubles met with in his practice. He bought an enormous encyclopedia of medicine, thinking that there, surely, was all wisdom gathered together in one mighty array. But even the wisdom of the encyclopedia was not enough. Not in all these mountains of paper could the answers be found to the questions which agitated his mind. He thought that his inability to diagnose his patients' complaints was due to his personal defects, but gradually through consultations and in other ways he came to recognize that the kind of information he wanted did not exist. He realized that the mysterious power of Dr. Briggs was nothing more or less than accumulated experience, and that the only way to find out what a symptom meant was to wait and see what happened to the person with that symptom. So he set before himself the task of finding out the nature of the symptoms and signs which he met in the course of his practice. He thus placed before himself two definite objects at which to aim. (1) The understanding of the mechanism of symptoms and (2) the understanding of their prognostic significance. It was this simple resolution and these definite aims which led to the tremendous achievements and the great success which came to Mackenzie in later years. He set to work to make full notes of every single symptom presented by every patient who came before him. Within a short time, however, he realized that it was impossible

to carry out his plan. There were too many symptoms to be recorded. So with great reluctance he decided to limit his work to certain groups of symptoms.

At about this time, occurred an incident which almost destroyed the faith and confidence Mackenzie had in himself. He was called one night to deliver a young woman in labor, a patient whom he had examined and visited during her pregnancy. The case promised to be easy and uneventful. The woman seemed to be making normal progress when suddenly she turned pale and lifeless, dead from sudden heart failure. An hour later, in his consulting room, as he pondered over the calamity, he asked himself "Would this death have occurred if I had had a better knowledge of heart afflictions?" He could not answer the question and felt a sense of guilt which chilled his very soul. Then and there he decided to obtain a better knowledge of the mechanism and symptoms which usually indicate heart trouble. It was thus that Mackenzie became a heart specialist.

He began his new work by studying the circulatory conditions of women before pregnancy and during pregnancy and the puerperium. He noted that one of the most frequent abnormal signs in pregnant women was an irregularity of the heart action. He realized that there must be dangerous types of irregularity and also types which are not dangerous. In order to differentiate them, he resolved to record the pulses of a large number of women, and to study the records closely. He used an instrument known as the Dudgeon Sphygmograph which produced pulse tracings on smoked paper which was afterwards varnished. He soon amassed an immense number of tracings and convinced himself that his idea that there were several different kinds of irregularities of the heart was correct. Yet he could not understand what all the different waves of these tracings meant. He turned from his tracings to the men and women he served. He noticed that many pregnant women and many sick people had pulsating veins in their necks. These pulsations were as varied as the waves of the pulse. The idea occurred to him that if he could get tracings of these venous pulsations new light might be thrown on the irregularities of the heart. He could not attach his sphygmograph to the neck, so he conceived the idea of fixing straws on the neck with a little gum and allowing these straws to record the venous pulsations on a smoked paper thrown slowly under the point of the straw.

In the midst of all this work he had fallen in love, and in 1887 he was married to Sarah Bellamy Jackson, who proved to be a great help to him in his later achievements.

The challenge of the tracings remained. His gummed straws gave way to tambours rigged to his Dudgeon's pulse writer, and so he managed to get the throbbings of the neck veins transferred to paper in a really effective way. He carried his tracings about and asked physiologists to interpret them for him, but he found no one who understood them so he resolved to try and decipher them himself. He reasoned that the heart must be the cause of the pulsations in the blood vessels, but could not understand why there should be three waves in the neck tracings, while in the pulse at the wrist there was only one wave corresponding to the beat of the heart. He then turned his attention to a plan for making simultaneous tracings of the heart beat and the venous pulse, and devised a crude form of the modern polygraph which bears his name. In this way he found that wave number one of the neck tracing was caused by the contraction of the right auricle, which caused a bulging of the jugular vein, and that wave number two was caused by the contraction of the left ventricle, which caused a pulsation in the carotid artery. The nature of wave number three remained obscure.

He carried this crude, bulky apparatus with him on his calls and used it on all patients who showed signs of heart trouble, and the marvels of his mystery machine soon gained for him great fame throughout the country side.

Many people regard this discovery of Mackenzie's as his greatest contribution to medicine. The pulsations in the neck veins had, however, been studied, unknown to Mackenzie, by Potain in France and by Riegel in Germany, and their interpretations were practically similar to his. They viewed the matter entirely from an academic standpoint, while Mackenzie applied this new knowledge in a practical way.

He was now enormously busy as a surgeon as well as a physician and obstetrician. His practice was becoming the best in East Lancashire. One day a patient presented himself with a marked irregularity of the heart, what he himself described as "missed beats." He took several tracings and discovered that extrasystoles, the name he gave to this form of irregularity, may be due to the ventricle contracting prematurely and not in the normal, orderly sequence. Today, this seems to us a very minor thing, yet,

at that time no one had the remotest idea of how this common irregularity was produced. When he announced his discovery no one believed it nor accepted it, and it was only after Cushny demonstrated the occurrence of extrasystoles experimentally in the mammalian heart, that the profession believed it.

He studied these irregularities for several years, and found that his patients who showed extrasystoles were alive and well and in active work six years later, so he concluded that extrasystoles of themselves were of no grave significance. He also turned his attention to children, and noted frequently an irregularity of the pulse due to breathing. He called this the "youthful type of irregularity" and the various forms of extrasystoles the "adult type of irregularity." He found that the "youthful type" or sinus arrhythmia as we call it today, was most common in healthy children, and after watching them for several years concluded that this condition was a physiologic one.

In the study of his numerous tracings, Mackenzie also noted a third type of irregularity, a type in which the pulse was so irregular that no two beats seemed to be of the same length or even the same size. He found that after five or six years a number of these patients were dead while others were suffering from various degrees of heart failure. He called this the "danger type of irregularity." By the use of his polygraph, he found that the tracings of the venous pulse were different from the other types of irregularities, and that the auricular wave of the tracing was absent. He could not explain this, so as usual he fell back on his method of "wait and see" for enlightenment. He found that this irregularity occurred mostly among elderly people who had suffered at one time or another from rheumatic fever, and that it was present in at least eighty per cent of all cases in which signs of decompensation were present. This led to a study of the connection between this type of irregularity and decompensation.

It was the teaching at this time that passive congestion of the liver and edema were due to "back pressure" and all doctors believed this faithfully. As soon as a doctor heard a heart murmur, the danger of back pressure rose in his mind, and the patient was advised to lead a quiet life and to avoid all strain and excitement lest the condition become aggravated and the back pressure increased. Many unnecessary invalids were produced by this advice, and I am sorry to say, are still being produced today because

the fear of back pressure still haunts the minds of some physicians. Mackenzie, however, could not accept the theory of back pressure as the cause of decompensation. He noted that enlargement of the liver and edema occurred in patients the valves of whose hearts were intact. He also noted that some patients with defective valves did not show any signs of back pressure at all. He knew that the heart was able to compensate when the valves were damaged and to overcome the influence of back pressure by the very force which was supposed to cause it.

About this time, also, a patient with mitral stenosis, whom he had observed for years, suddenly developed the dangerous type of irregularity. She became gravely ill and congestion of the liver and edema appeared. On listening to the heart, he was surprised to find that the presystolic murmur of mitral stenosis had disappeared. In a flash the thought came to him that the reason the murmur had disappeared was that the auricles had ceased beating. At this time, he gave the name of "paralysis of the auricle" to this type of irregularity which is now called auricular fibrillation. He also concluded that the symptoms which were ascribed to back pressure were really due to lack of forward pressure, and in 1899, he gave to medicine the idea which we consider quite commonplace today but which was perhaps one of the greatest contributions to cardiology in our times, that the efficiency of the heart depends on the functional capacity of its muscle walls. About this time, other facts also presented themselves to him. He found that patients with slow fibrillation did not show signs of decompensation, and that the administration of digitalis which tended to slow the fibrillation would result in improvement of the decompensation. These signs also tended to confirm his belief that the cause of decompensation was exhaustion of the ventricle and loss of efficiency of its muscle tissue.

Mackenzie applied the same principles to the study of heart murmurs. The conception of heart murmurs at that time, and I might say a conception which still misleads many members of our profession even today, was that all murmurs were of pathologic significance. Mackenzie was able to distinguish the pathologic murmur from the functional murmur. He recognized also that the heart at rest uses only enough force to maintain the circulation, and that there was also a reserve force which was called into play in response to effort. The first sign of heart failure was bound to be a diminu-

tion of this reserve force, and the earliest symptoms of failure would be shown after effort. The response to effort, therefore, was the measure of the heart's efficiency.

His ideas were not readily accepted by the leaders of the profession. His early papers and writings were refused by the leading medical journals, but Mackenzie bore the editors of these journals no ill will for this early neglect of him. He did not expect that the views of a general practitioner would be presented to the world. He decided that he would have to fight for recognition, and so in 1902 he published his book "The Study of the Pulse." This work was received with favor in Germany and America long before the giants of the profession in England would even glance at it. He was invited to visit Canada, America, and the continent, and accepted these invitations. He was hailed everywhere he went. When he returned home foreign physicians came to visit him at Burnly and to see his work and methods. The leading men of his own country, however, did not come to him, so he decided to go to them.

At the age of fifty-four, he moved to London. The first year in London was a very gloomy one. There was literally nothing coming in and the prospects for the future were not very encouraging. Mackenzie was not a member of the Royal College of Physicians, and that meant that his chance of obtaining an appointment at any of the London hospitals was very remote, and these connections were necessary for building up a practice. In the midst of it all, his daughter Jean, to whom he was very much attached, died. This was a most profound blow and deeply affected him. His book "Diseases of the Heart" which had been published shortly before Jean's death was selling very well, and was accomplishing the unexpected for him. It was bringing him patients. In the first year in London, his income was less than \$600 while in the second year, he earned more than \$5,000.

During his second year in London, there was a miraculous change in the attitude of the leaders of the medical profession towards him. They welcomed him at every approach and hailed his opinions as the authentic truth. He was invited to become the head of a specially created heart department at the London Hospital. He was elected a fellow of the Royal College of Physicians of London. His practice continued to increase, and everyone, both physician and patient, referred to him as a wizard and prophet. Mackenzie resented this, and al-

ways taught his students that his ability to make diagnoses and prognoses was due to his study and knowledge of essential symptoms, and warned them that no instrument, neither stethoscope, polygraph, nor electrocardiograph could replace the mind and reasoning power of the doctor himself.

Mackenzie was not very enthusiastic about the electrocardiograph which was brought out by Einthoven about this time. To him, it seemed to promise further information only about a branch of heart study concerning which he thought he had enough information already. It did not seem to promise any further information about the response of the heart to effort and this was the all absorbing question to him. Had he been a younger man, I think that he would have undertaken the study of electrocardiography with the same zeal and interest that he showed in the other fields of cardiology, and would have contributed greatly to our knowledge of the electrocardiogram. The use of the electrocardiograph helped to establish Mackenzie as a wizard, for it proved that his tracings and their interpretations were correct. A new school of cardiology had arisen, the Mackenzie School, and a great field of research was opened. He was very much pleased with this at first, but as time passed he began to grow restive about it. He felt that his young disciples were devoting too much attention to research and not enough to the actual practice of medicine. It is said that a distinguished American doctor visited Mackenzie and asked him what line of research he would advise him to take up on his return home. "I would advise you to go into general practice and stay there for ten years," Mackenzie replied. "It is only in general practice that a man can learn to foresee danger to his patient and how to prevent it."

The war came, and with it came the problem of the "Soldier's Heart." Mackenzie and Lewis were called upon for help in solving the problem. Again Mackenzie applied himself to a study of symptoms in these men, and found that the cases called D. A. H. (Disordered Action of the Heart) showed different symptoms from the cases of valvular disease of the heart. In true heart failure, cessation of effort relieved the patient immediately of his pain and dyspnea, while in the other cases cessation of effort did not bring back the sensation of well being, and symptoms of exhaustion and pain would continue. He also found that in eighty per cent of these cases a history of infection such as influenza, rheumatism, trench fever, or

dysentery could be elicited. The war office, impressed by this work, opened a special hospital at Hampstead for the study of "Soldier's Heart."

His work in London had served its purpose, but he himself had become very much discontented. The young men who had come forth from the "Mackenzie School" were really separated from him by an unbridgeable gulf. They belonged to scientific medicine, and the needs of general practice as understood by Mackenzie were unknown to them. So we find him late in 1918, as the war was drawing to a close and when he himself was sixty-five years of age, leaving London and a forty thousand dollar practice and returning to general practice in the country. He did this in order to study the earliest symptoms of disease. He chose the Scottish town of St. Andrews as the scene of his new labors, partly because it is close to his native Perth, and partly because it was more or less isolated from the rest of the world. It also had a medical school attached to its ancient university, and, last but not least, the greatest golf course in the world. He became consulting physician to the St. Andrews Cottage Hospital and established weekly out-patient clinics at which he saw patients brought to him by the general practitioners of the town. He created an Institute for Clinical Research to study the early stages of disease and discover the significance of early symptoms, with a view to ascertaining the mechanism of their production.

Shortly after Mackenzie came to St. Andrews, he knew definitely that he was suffering from angina pectoris, the disease he had studied so intensively. This did not deter him from his work at the Institute. He revised his great book on diseases of the heart. He wrote numerous articles for the medical journals. He even wrote a book on the dread malady which had seized him. He lectured in London, in Edinburgh, in Dundee, and in Aberdeen. His activities, however, had to be gradually diminished. He also had to give up his beloved golf. His visits to the Institute became fewer and fewer, and finally he had to resign the active directorship of the Institute.

In the early days of 1924, he was compelled to go to bed, and on January 26, 1925, he went to his rest. The world lost a great man, but the fruit of his labors and the rôle he played in the advancement of our knowledge of cardiology in the last thirty-five years, remain as an everlasting monument to his memory.

CLINICAL PATHOLOGICAL CONFERENCE

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MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the *Journal-Lancet* is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—803.

The case is that of a white girl, age 11, admitted to hospital May 17, 1930, complaining of coma and fits. The mother stated that the child had been perfectly well. On May 15 she complained of a headache and came home from school. She was feverish. She ached all over, severely in her bones, back, and head. This continued until 5 A. M. the day of admission, when she moaned, became unconscious, and had what the mother described as a generalized convulsion which lasted continuously for an hour. Since then she had not been conscious but had had vermicular movements of her hands and arms. The legs were alternately stiff and relaxed.

Physical examination showed a white girl in a comatose condition; the lower extremities were spastic; the upper extremities went through vermicular movements at times. The pupils were moderately dilated. The right ear drum was slightly reddened. The heart was very rapid but regular. There was fetal rhythm present. Knee jerk 3+. There was unsustained ankle clonus. Babinski positive bilaterally. On May 18 the biceps jerks were equal; they were not exaggerated.

A spinal puncture revealed no increase in pressure. The fluid appeared grossly clear. The eye grounds were negative.

The child's signs and symptoms were somewhat variable after admission. The reflexes at one time would be markedly exaggerated and the extremities spastic. At another time the reflexes were absent or diminished and the extremities flaccid. However, she had been unconscious during entire stay and showed signs and symptoms of a motor neuron lesion. She died May 23, 4 P. M.

The temperature on admission was 103.4° and after admission it varied between 107° and 100° just before death. The pulse on admission was 120. It varied between 140 and 88 just before death.

The urine showed an occasional leucocyte and an occasional hyaline cast. The spinal fluid on May 17 was clear and negative for globulin; there were 6 cells. On May 19 the sugar was .1 per cent. On admission there were 14,000 white blood cells. On May 19 the hemoglobin was 83 per cent, red blood cells 4,620,000, and white blood cells 25,050; poly-

morphonuclears 92 per cent; lymphocytes 8 per cent. On May 21 there were 20,805 white blood cells. The differential was practically the same. The blood Wassermann was negative. On May 19 the creatin was 4.1 mg., the urea nitrogen 102.9 mg.

Post-mortem report. Terminal bronchopneumonia. Cloudy swelling of the heart, liver, and kidneys. The brain shows no lesions on the external surface but on section numerous petechial hemorrhages are found throughout the white substances. The hemorrhages are most marked in the occipital lobe but are diffusely scattered through the entire brain. The middle ears and mastoid show no infection.

Diagnosis. Hemorrhagic encephalitis.

Comment. This is the most common form of encephalitis and is frequently encountered in post-mortem work. The etiology is unknown but there is some evidence that it is due to streptococci infection. Grossly it is characterized by numerous hemorrhages in the white substance of the brain. Microscopically the hemorrhage is found to be due to rupture of capillaries and there is very little inflammatory reaction. There is no obvious explanation for the retention of urea nitrogen.

Autopsy—30—817.

The case is that of a man, 67 years old, admitted to the hospital May 13 and died May 29, 1930 (16 days). Chief complaints: epigastric tumor, growing since first noted April 1, 1930; pain in epigastrium following accident in March 1930, persistent, and accompanied by fever; swelling of feet, ankles, and thighs since March or April, 1930. Late in March, 1930, patient was run over by a sled; the runner passed over his abdomen. Following this accident he had severe pain in the epigastrium, sharp, constant, and radiating straight through to the spine and up to the right shoulder. Simultaneously patient began to have vomiting spells which seemed to occur when pain was most severe. Pain had no relation to type or time of food. Vomiting had now stopped. While patient was recovering from the shock of the accident, he noticed a tumor mass in the epigastrium because of which he called a physician. It was found that he had a fever and that he had moderate swelling of his ankles as well as the mass and pain previously described. The mass

had grown in size since it was discovered, and the patient said its growth had been very rapid. Had lost all desire to eat and the swelling in his ankles had progressed up his legs. He became very weak and found it hard to breathe.

No complaints except colds up to four weeks ago. In September, 1929, injured hip in automobile crash; did not think there was a fracture. Headaches during past four weeks. Left eye had been blind for five years. Other eye was fair. Became dizzy if he went without his glasses. Left eye was supposed to have been blinded because of a cinder. Dyspnea. No precordial pain or palpitation. Had to take mineral oil every night for constipation. Was having dark stools, which he never had up to four weeks ago (nearly black). Hemorrhoids had bled in the past but not recently. Stool had been small, hard, and very black. Frequent urination of small amounts. Desire to urinate about every half hour during day; trouble starting stream and also said urine got away from him quite often; able to pass about one half cupful at a time, which was very dark colored and caused burning. Patient was jaundiced and had been yellow for some time. Worked as a farmer.

Grandparents died suddenly; father 63, typhoid; mother 63, apoplexy; one daughter 17, tuberculosis.

Physical examination: emaciated, elderly male, presenting moderate jaundice. Has appearance of recent weight loss. Left eye blind (cataract). Right eye looks normal. Conjunctiva yellowish tinge. Marked dental caries and gingivitis. Chest thin, sthenic type, symmetrical. Percussion note normal to hyperresonance except at bases where there is impairment. Râles at both bases posteriorly. Heart slightly enlarged. P2 greater than A2. No murmurs. Blood pressure 124/82. Pulse 88.

Inspection revealed right side of abdomen larger than left; it was tender to moderately deep pressure. Extending from the costal angle to a point two cm. below umbilicus and apparently connected to the liver and running down toward the right lower quadrant, there was a firm mass which was somewhat elastic in consistence and moderately tender to percussion. It was of the same dullness as the liver. There was a large right, indirect, inguinal hernia. Genitalia normal. Hemorrhoids present. Rectal examination revealed moderately diffuse enlargement of the prostate, not tender or hard. Edema of ankles and feet extending to middle of tibia. Pitting occurred on pressure. Reflexes negative. Consultation with urologist: very slight enlargement of prostate, apparently not malignant. Old iridocyclitis, left, with cataract and vascularization of iris from long ciliary muscle vessel. Right: media clear; fundus normal.

Urine: sugar; bile pigment. Blood, Wassermann negative. Hemoglobin 77 per cent; polymorphonuclears 85 per cent; lymphocytes 15 per cent; white blood cells 6,650. Blood urea nitrogen 19.6 mg. Icterus index 24; van den Bergh, direct positive, indirect positive. Urine: urobilin positive; Diazo positive. Stool: no muscle fibers or fat; amylase; no digestion of one per cent solution in three hours at body temperature. Amylase probably greatly reduced in amount. Stool: urobilin positive. Gastric

expression (histamin), free hydrochloric acid present; total acidity 22, 80, 82, 90; total chlorides 290, 479, 501, 503. Bleeding time three minutes. X-ray, May 14, displacement of stomach, probably by liver mass. Examination somewhat indeterminate. Barium enema unsatisfactory because patient was unable to retain enema.

Diagnostic impression: metastatic carcinoma of liver; primary undetermined. May 27, seen by surgical staff who advised exploratory operation. Diagnosis between metastatic carcinoma of liver and pancreatic cyst. May 29, patient found dead in bed at 5:10 P. M. No special complaints that afternoon. Duodenal tube passed without difficulty. Complaints of abdominal pain previous to this but not extreme.

Temperature 97.6°; pulse 70 to 100; respirations 16 to 20; weight 168.

Post-mortem report. Marked edema of the lower extremities and lower abdominal wall. Jaundice grade three. Multiple petechial hemorrhages over the skin. Two small bluish subcutaneous nodules, on the anterior surface of the right forearm. About a liter of bile stained fluid in the peritoneal cavity. Numerous dark colored metastases on the visceral and parietal pleure. Heart weighs 400 grams; some hypertrophy of the left ventricle. No pneumonia. Metastases in the peritoneal surface of the spleen. Liver enormously enlarged, weighing 8450 grams; intensely black in color and the substance is largely replaced by grayish or black tumor nodules. Metastases in the pancreas. Metastases in the mediastinal lymph nodes. The left eye contains a malignant melanoma (melanosarcoma).

Diagnosis. Malignant melanoma (melanosarcoma) of the left eye with widespread metastases, especially in the liver.

Comment. Malignant melanomas of the eye are often not correctly interpreted clinically. There are several cases on our records in which a clinical picture similar to this developed in a patient who had had one eye removed many years before. No pathologic examination having been made of the eye, the diagnosis could not be made clinically with certainty. Malignant melanomas of the eye frequently metastasize chiefly to the liver.

Autopsy—30—110.

The case is that of a man, aged 47, who was admitted to hospital December 23, 1929, complaining of general weakness, pain in both sides of the chest, in both shoulders, and in the upper part of the neck. He also had frequent headache and showed a loss of weight (from 195 lbs. to 135 lbs.). He had four brothers and one sister living and well; father and mother were deceased. He had measles and mumps during childhood; pneumonia and typhoid at the age of 20 years; scarlet fever about 12 years ago; gonorrhoea in 1926.

He had had headaches for several years and had had pains in his chest for several months. He also had shortness of breath on exercise. Appetite fair; bowels sluggish. He had night sweats. The lungs were practically negative. Blood pressure 115/82. Transverse measurement of the heart in a six foot plate was 16.1 cm., 54 per cent of the width of the

chest. No cardiac murmurs. Patient had urethral stricture and chronic prostatitis. No gonococci found. Neurologic examination negative. There was a soft tumor occupying the position of the upper end of the sternum, the manubrium being partly replaced by the tumor.

White blood cells 8,100; polymorphonuclears 44 per cent; lymphocytes 47 per cent; monocytes 6 per cent; hemoglobin 40 per cent. Sputum negative. Wassermann negative.

The urine showed a trace of albumin. Specimen examined after death showed Bence-Jones albumin.

X-ray examination revealed extensive rarefaction of the sternum, skull, ribs, vertebræ and scapulæ.

Patient grew steadily weaker and died January 15, 1930.

Post-mortem report. Multiple myelomata involving the sternum, skull, ribs, vertebræ, and scapulæ. Terminal bronchopneumonia. Healed primary tuberculosis of the lung. Marked emaciation.

Autopsy—30—891.

Man, 54 years old, admitted to hospital January 9, 1929, complaining of pains in arms and legs, fainting spells, cramps in the stomach, constipation, weakness, headache and sharp pains through the eyes. The onset of the illness was slow, and no definite date of onset can be determined.

Temperature normal. Weight 190 lbs. Lungs normal to percussion and auscultation. X-ray shows old healed tuberculosis in the upper lobes, more marked on the left. Moderate enlargement of the prostate. Was troubled with obstinate constipation; took some form of cathartic regularly; never had diarrhea. He had epigastric distress occasionally, more marked after acid foods. Had occasional attacks of severe abdominal pain. The abdomen was negative except for tenderness in the right epigastrium; no palpable mass. One x-ray examination of the stomach showed a dumb-bell constriction in the central portion.

The patient had ideas of persecution and delusions. His judgment was markedly impaired. He sometimes became violent so that he had to be restrained in bed. No neurologic examination was made.

Urine: specific gravity 1028; no albumin; no sugar. P. S. P. 41 per cent in two hours. Water concentration test normal. Sputum negative for tubercle bacilli. Blood: red cells 3,070,000; hemoglobin 64 per cent; color index 1.6; leucocytes 5,000; polymorphonuclears 31 per cent; lymphocytes 64 per cent; monocytes 4 per cent, moderate anisocytosis and poikilocytosis; no nucleated reds. Subsequent blood examinations were similar to this one. Wassermann negative.

Gastric analysis: total acidity 4°; no free HCl. Positive occult blood in stools.

Carcinoma of the stomach was considered the most probable diagnosis. Death, March 2, 1930.

Post-mortem report. Weight about 130 lbs.; no edema; pale, yellowish white skin with many areas of pigmentation. No free fluid in the serous cavities. Heart weighs 250 grams; marked sclerosis of the left coronary artery; muscle is pale and soft. Old

healed tuberculosis in the apex of the left lung. The liver is of brownish color and shows large amounts of hemosiderin on microscopic examination. No calculi in the gall bladder. Spleen weighs 70 grams. The stomach shows no abnormality except thinning of the mucosa. Marked lipomatosis of the pancreas. Calcification of the abdominal aorta. Bone marrow in the shaft of the femur is for the most part fatty but there are a number of small areas of red marrow throughout the fatty marrow.

Microscopic examination of the spinal cord shows typical subacute combined degeneration.

Diagnosis. Pernicious anemia with subacute combined degeneration of the spinal cord.

Comment. The blood picture in this case was typical of pernicious anemia and subsequent roentgenological examination would probably have shown that the defect in the stomach interpreted as carcinoma was due to muscle spasm. A neurologic examination would also have shown evidences of combined degeneration of the spinal cord. The patient was not given the advantage of the pernicious anemia treatment.

Autopsy—30—894.

Man, 49, admitted to hospital March 17, 1930. Present trouble began with a sore on the lower lip in the winter of 1926. He was given local treatment of the sore for over two years. In January, 1929, a portion of the lip, including the tumor, was excised. In June, 1929, the cervical lymph nodes had become enlarged and these were removed. Another operation on the cervical lymph nodes was performed October 18, 1929.

On admission, March 17, he complained of weakness, loss of weight, severe pain in the neck, and pain in the upper abdomen. There was a large carcinomatous ulcer on the under surface of the left jaw.

On March 25 the patient developed hemorrhage from this ulcer and died within a few hours.

Post-mortem report. Marked emaciation. Large ulcer eight cm. in diameter and four cm. in depth on the left side of the neck below the mandible. The ulcer has a gangrenous odor. There is a small scar in the lower lip at the site of the first operation. The cervical lymph nodes are enlarged and firm. The hemorrhage is evidently due to perforation of the internal jugular vein which lies in the floor of the ulcer. Purulent bronchitis. No metastases below the clavicles.

Diagnosis. Recurrent carcinoma of the lower lip. Death from hemorrhage.

Comment. This case illustrates the terminal stage of carcinoma of the lower lip. There is usually an extensive carcinomatous ulcer in the neck which forms by extension of the tumor from the cervical lymph nodes. Death is usually due to infection or hemorrhage and the metastases are not found below the clavicle. The case also illustrates neglect in treatment. This tumor might have been cured easily when the patient first consulted a physician, but local treatment was continued for two years; and even when surgery was finally undertaken, the cervical lymph nodes were not removed. The cervical lymph nodes should always be removed in a definite carcinoma of the lower lip.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of May 17, 1930

On Wednesday evening, May 17, 1930, at the Minnesota Club, St. Paul, the Minnesota Academy of Medicine, in lieu of its regular May meeting, gave a Founders' Dinner in honor of the living members of the group that founded the Academy in 1887. There were 75 members and guests present.

DR. EMIL S. GEIST, President of the Academy, acted as toastmaster.

DR. GEIST: Members of the Academy: In honoring our guests this evening we but honor ourselves. Of the forty Founders of this association, ten are living today. They are:

DR. FRANK ALLPORT
 DR. R. O. BEARD
 DR. J. W. BELL
 DR. H. M. BRACKEN
 DR. WILLIAM DAVIS
 DR. F. A. DUNSMOOR
 DR. J. F. FULTON
 DR. W. A. JONES
 DR. JUSTUS OHAGE
 DR. THOMAS S. ROBERTS

We regret that DRs. ALLPORT, BRACKEN and DUNSMOOR are not with us this evening.

You will note that the majority of these gentlemen hail originally from Minneapolis, which may be proof that perhaps after all Minneapolis is a more salubrious city than St. Paul.

1887! That was the year of the founding of this Academy. At that time St. Paul had about 115,000 inhabitants and Minneapolis perhaps a few more. That was the time of the great "census war" when there existed much rivalry between the sister cities. Even the inhabitants of cemeteries were counted as "population" and no doubt our honored guests did their level best at that time to increase the population.

That was the time of the horse, the gas lamp, the horse car and the cable car.

St. Paul was a much smaller city than it is today. The Cathedral stood on the site occupied by the Hamm Building, filled as it now is with doctors. Can this be termed progress?

The end of Summit Avenue was at Dale Street. Beyond that was wilderness. Third Street was the chief business thoroughfare. Who of us does not remember the Tivoli and the Merchants Hotel? Who does not recall the

old Windsor Hotel, located as it was across the street from the building occupied by a large group of physicians? And its bar?

To get to Minneapolis was a hardship. One availed one's self either of the railroad or took a horse and buggy. In either event it was a day's journey. Minneapolis had emerged from being St. Anthony Falls. Washington Avenue was "the" business street. It was the day of the Exposition Building and the "Panorama." The University was still a baby. There were not only large flour mills but also large lumber mills; the latter now a thing of the past.

In those days golf was unheard of. For amusement the doctors went fishing, boating and hunting. The Mississippi River, our finest asset, was much used for these purposes. It had not yet become a glorified sewer.

In introducing the first speaker, I am introducing the man whose mind conceived this organization. He was also its *first* President. He is with us tonight as young as he ever was.

I take great pleasure in introducing Dr. John F. Fulton, of St. Paul (Applause).

DR. FULTON: In October, 1887, a few representative medical practitioners of the Twin Cities assembled in the West Hotel, Minneapolis, for the purpose of organizing a medical society, with the intention of bringing together all of the specialties in medicine and thus combine the most powerful aids for the advancement of general medicine and surgery, keenly appreciating the fact that the specialist whose education is not well-founded on the art and science of general medicine is not worthy of recognition by the profession, and believing that the specialist, from the enthusiasm in his profession, devotes his entire life to the double object of planting seeds gathered from the great stores of general medicine into his special soil, in order to return gratefully to general medicine the harvest which is ripened fruit. A specialist can make no advance or discovery in his field which will not have a beneficial effect upon all branches of medicine. So it was the wish of those who organized this Academy, expressed in the language of another, that each specialty should be a diamond held together by a string of gold which is scientific medicine and surgery.

Ophthalmology was the first specialty to establish itself as such. But no class of men have been so constant and determined in retaining their co-operative relationship with other branches of medicine. As an illustration, Doctor Cushing, in a recent address, referring to the maladies of the optic chiasm, remarked that this was the crossroads where

the ophthalmologist, the physiologist, the pathologist, the neurologist and the general surgeon met, but the ophthalmologist holds the right of way. The association of the oculist and the neurologist has always been most intimate.

In 1865, Sir Hughlings Jackson said: "It is imperative in all cases of cerebral disease to examine the eyes with the ophthalmoscope whether the patient complains of defect of sight or not. The intraocular condition most frequently discovered is double optic neuritis, and it is very common for this to exist in a patient who can read the smallest type and who supposes his sight is good."

In a recent address, Dr. Edward Jackson declared: "It is a modest inference, going little, if any, beyond what individuals have already received, to claim that ophthalmoscopic examination of the optic nerve will, in the very near future, play as important a part in the observation of general disease as the feeling of the pulse did seventy years ago."

This is a very strong indication of the progress that has been made in the development of the ophthalmoscope as a diagnostic instrument in general practice from the days of Sir Hughlings Jackson, of England, to the present day of Dr. Edward Jackson of America.

No one gave a greater impulse to the value of the ophthalmoscope in diagnosis than Sir Clifford Allbutt. His epoch making monograph on the use of the ophthalmoscope in diagnosing disease of the brain and spinal cord and of optic neuritis in pyemia is one of our most useful textbooks today.

The importance of medical ophthalmology was quickly recognized by American physicians, among the first being S. Weir Mitchell. I know that every member of the Academy is familiar with his magnificent work along this line. It was this genius of our profession who first used the word "eyestrain" in his classification of headaches.

Other American authorities, such as William F. Norris, of Philadelphia, during my student days, insisted that all patients in the University Hospital of Pennsylvania should have careful ophthalmoscopic examinations.

The relation of the eye to the central nervous system has been referred to as the "bulletin board of diseases of the brain and the spinal cord." Of the twelve cerebral nerves, six are distributed partly or wholly in the eye and its appendages.

Now that so many of us are in a historical turn of mind, I am reminded that I was in Berlin when Koch first announced his tuberculin treatment of tuberculosis before it had been thoroughly investigated. It was claimed at the time, as I remember, that he was forced to do this by the high government officials, on account of the International Medical Congress which was in session in Berlin at that time.

Mr. Treacher Collins, of London, was one of the first to test tuberculin therapeutically for ocular tuberculosis. The pathology being situated as nodules on the edge of the pupil, the result was disastrous, starting up a severe reaction which resulted in the loss of the eye. This did not discourage Mr. Col-

lins, however, from continuing the use of tuberculin therapeutically for ocular tuberculosis, as he has recently pronounced it a most reliable and satisfactory remedy for this condition.

It is to be hoped that this Academy will use its influence to establish a great library in this community, such as the one that has recently been opened in the East, and others that are about to be opened, in which will be stored all of the treasures of medical literature. In the language of one who is the maker of books himself and a lover of books and literature: "It should not be a graveyard for the accumulation of volumes only to be forgotten, but a place in which there is a spirit world of books, useful to all who know how to use them.

The doctor need not go outside of his own profession in order to find absorbing interesting literature. The chapter in "Vallery-Radot's Life of Pasteur" on the working out of a vaccine for the relief of hydrophobia is the most thrilling and interesting that can be found in any literature production. And Cushing's "Life of Osler" is one of the most popular books that has been written in many years. If there is any member of this Academy who has not read it, he has a great treat ahead of him.

Since this Academy has been organized ophthalmia neonatorum has been eliminated; sympathetic ophthalmia is a rarity; and trachoma is confined to localities where hygienic conditions are not obtainable.

But what of the future? What shall we have to report forty years from now? We are expecting much. Our hope, however, hangs on physiology, biochemistry and biophysics. The two conditions that will be most improved by such progressive development in ophthalmology will be glaucoma, and lenticular and corneal opacities. In regard to the latter, Duke Elder in a recent address expresses himself as follows: "Cataract, as we have seen, is another purely physical-chemical problem, the denaturation, hydrolysis and coagulation of the proteins of the lens, and the essential opacities which occur in the cornea seem to be of the same nature. All of these conditions will before long be applicable, and all of them should eventually be curable or preventable by physio-chemical means"; all of which I endorse.

With a more thorough knowledge of the internal fluid circulations of the eye, and the study of the function of the supplementary system of the circulation, known as the lymphatics, we have every reason to hope that the syndrome known as glaucoma will become preventable and then, when it does occur, its course will be checked from the disastrous course which we now think is inevitable.

I am enthusiastic in the belief that this Academy will continue to be a careful recorder of clinical observations, the encourager of laboratory investigation, and a just endorser of new meritorious therapeutic agents.

I cannot do better in closing than to repeat a quotation from Sir T. Brown, as I did in my first address to this Academy: "Where Nature fills the sails, the vessel goes smoothly on, and where judgment is the pilot, the rate of insurance need not be

high. Where industry builds up Nature, we may expect pyramids, but where this foundation is wanting, the structure must be low. They do most by books, who could do much without them, and he that chiefly owes himself unto himself, is a substantial man" (Applause).

DR. GEIST (introducing Dr. Bell): In 1887, Lake Harriet was far away from Minneapolis. It was used for picnic purposes. Today it is surrounded by dignified city homes. It was my privilege to invite the next speaker at one of these homes. Dr. Bell has seen Minneapolis grow from infancy to mature manhood. During that time everything about Minneapolis has changed except himself, who has remained ever youthful. I take great pleasure in introducing Dr. John W. Bell, of Minneapolis (Applause).

DR. BELL: On an occasion of this kind we naturally focus our attention upon the past. As early as 1885, the progressive physicians of the Twin Cities felt that the time had arrived for the founding of a State Society that would especially appeal to those interested in original work.

Fortunately the founders of the Minnesota Academy of Medicine were not confronted by the unfortunate situation existing today, of innumerable and overlapping medical societies and organizations, tending to weaken rather than to strengthen the county, state and national groups. Personally, I feel that Drs. Fulton, Abbott, Wells and Beard are largely responsible for the birth of this organization.

Our first Secretary, Dr. R. O. Beard, who continued to labor for fifteen years in the interest of the Academy, undoubtedly had much to do with shaping its policy and destiny. It gives me great pleasure, after the many years of useful and unselfish service he has given to the Academy and to medicine in general, to have him still active in public health work.

The Minnesota Academy of Medicine has had, and will doubtless continue to have, a prominent part in shaping the course and destiny of things medical in the State and the Northwest (Applause).

DR. GEIST (introducing Dr. Ohage): The next speaker you all know. I think perhaps you know him better than I do; I am still trying to figure him out. I take great pleasure in introducing Dr. Justus Ohage, of St. Paul (Applause).

DR. OHAGE: Gentlemen: Being one of the charter members, and perhaps the oldest, of this organization, the present President, Dr. Emil Geist, of Minneapolis, requested me to make a few remarks about surgery at the present time compared to that half a century ago. A few years ago I had the pleasure of visiting one of the largest and finest clinics in the country, the Mayo Clinic, at Rochester, Minn. Its grandeur, thoroughness and success were a marvel to me, and I could not help comparing the facilities and resources of this institution with conditions which I had to face fifty years ago. Then

there were but few hospitals, most operations were done in private houses under very bad septic conditions, indifferent assistants, few nurses and often after hard and strenuous trips. My main reliance, and it is still the best, against sepsis, was scrupulous cleanliness with bichloride as an adjuvant. Often I had to be my own assistant, caretaker of instruments and dressings, while the local surgeon administered the anesthetic.

I will recite to you only a few cases out of very many. In the winter of 1883, Dr. E. Y. Chilton, of Howard Lake, Minnesota, called me for an operation for intestinal intussusception. The doctor met me with his cutter at the depot, and after an eight mile ride over rough roads and snowbanks at 35° below zero, we arrived at the farmhouse where the patient lived. I operated, Dr. Chilton gave the ether, and an old farmer with a huge beard held the kerosene lamp for light. He got his whiskers over the lamp chimney, which set his beard afire. He fell and fainted, the lamp exploded and set the kitchen where we operated on fire. I had just relieved the obstruction and was ready to close the abdominal wound. I lugged the patient into the cold adjoining room, the fire was extinguished, and I closed the abdomen, dressed him and put him to bed. He made a clean recovery.

A year later I did an ovariectomy for Dr. Wm. Lincoln, at Wabasha, Minn. The patient was the wife of the railroad section foreman. The operation was done in the sitting room of the section house. Dr. Lincoln assisted and a druggist gave the anesthetic. The operation was an easy one, and after removing the tumor, Dr. Lincoln sponged out the abdomen while I was getting the sutures ready. At that period I used sea sponges previously boiled. Upon inquiry he answered me that everything was out. I closed the abdomen, applied the dressing and had the patient put to bed. I had heard of things being left in an abdomen and their dire consequences and always counted every instrument and sponge before and after an operation. Everything was accounted for, but instead of six, I could find only five sponges, one was missing. We hunted all over the room, under tables and in closets, in the yard where the bloody water was thrown, but no sign of the sponge. I concluded if it was anywhere it must have been overlooked and still be in the abdomen. By this time her husband had joined in the hunt, and he became rather boisterous and not very complimentary in his vocabulary. The situation was not a pleasant one. A wild, powerful Irishman, his wife just recovering from the anesthetic and a sponge in her abdomen! At last I succeeded in getting the patient back on the table, reopened the wound and found the sponge behind a coil of intestines. The patient made an uneventful recovery.

In the year 1886, I operated in St. Joseph's Hospital on two cases for gallstone trouble; the first was a cholecystotomy and the other a cholecystectomy. Both cases recovered and lived to a good old age. They were the first cases ever operated on in America. I published them in the *Medical News* of Philadelphia, Feb. 19 and 26, 1887, then the leading medical journal in the United States. I incidentally mention this as Dr. Geist claims the honor

of priority for a member of the Minnesota Academy of Medicine. The feasibility and success of these operations having been established, they are now frequently done and have saved many lives and allayed suffering.

When the new and modern St. Luke's Hospital on Smith Avenue was dedicated, I was selected to do the inaugural operations, a resection of the stomach for malignant disease, and another patient for gallbladder trouble.

I operated before the senior class of the State University. Among the students were four young women. I was always skeptical about women entering the medical profession and at this occasion thought their attention was rather poor. I looked for a little revenge. During the gallbladder operation, I saved a little of the bile in a tumbler and with my talk about the operation I drew attention to the necessity of close observation. The *vox viva* of the teacher and an occasional addition of a little "Attic salt" will make a lasting impression. "Some of you" I told them "may settle in a small country town and get into a talk with some of the old wise women of the place. They will watch and judge you. They may ask your opinion about poor Mrs. Brown vomiting yellow bile and bitter as gall. So you may know everything about bile, I pass this sample. You can tell its weight, see its color, smell its odor, and if you do as I do, put the tip of your finger in it and taste it, you can tell whether it is bitter or not. Now have you all examined it?" "Yes." "It is bitter?" "Very." "Then you all are poor observers. You did not observe that I put my middle finger into the bile and my index finger in my mouth."

The Minnesota Academy of Medicine has well done its share in advancing the progress of medical science and will certainly continue to do so.

Vivat—Crescat—Floreat! (Applause).

DR. GEIST (introducing Dr. Roberts): In 1887 the next speaker was a young man. He is still a young man. He was then an excellent physician and ornithologist. He is still the same. During the past year he has devoted more of his time to his glorious hobby, "birds," and his work for, about and among them is known all over the country. Long may he live! I take great pleasure in introducing Dr. Thomas S. Roberts, of Minneapolis (Applause).

DR. ROBERTS: I wish to take this opportunity of thanking the committee that arranged this dinner. I was not aware until notified by our President and Secretary that I am entitled to a place among the Founders of the Academy. Such being the case, the honor must have come through the courtesy of my friend and preceptor, Dr. A. W. Abbott. I had the good fortune to be in his office for two summers before, and to be his surgical assistant for nearly seven years after my graduation. A more kindly, unselfish and loyal friend no young man ever had.

Dr. Ohage has told you of the primitive conditions under which surgery was often done in those pre-hospital days. The operating room was not infre-

quently the kitchen or living room of the patient's home, and the operating table was usually the kitchen or laundry table. The helpers were members of the family or interested and curious neighbors; trained nurses were few and far between; the kitchen kettles and pans and stove provided the means for such sterilizing as was done; and not many of the things considered so essential today were at hand. However, the results were surprisingly good considering the increased risks incurred, from the present point of view. Some years ago Dr. Abbott read before this Academy a paper presenting in his happy manner a picture of those good old primitive pioneer days.

Having mentioned Dr. Abbott as a physician and surgeon, I may perhaps be permitted to present him in another aspect, unknown I imagine to most of you who knew him well in and out of the Academy. When I first became acquainted with the doctor, I was acting as Secretary of the Minnesota Academy of Natural Sciences. Many of the original members of that organization were physicians, as it was the era when medical men quite generally were interested in the natural sciences. As a boy I turned naturally to such pursuits, attended the meetings of the Academy, and became a member while still a student in the Minneapolis Schools. A little later Dr. Abbott was admitted to membership, and it is of his hobby or special interest that I wish to speak. He believed, whether independently or not I cannot say, that it might be possible to determine the age of a fish by studying the concentric lines of growth on the scales. He collected considerable material and made a beautiful series of enlarged fish scales of various species. The Smithsonian Institute and the United States Department of Fisheries, with Dr. Spencer F. Baird in charge, became interested in the doctor's work and a correspondence developed. Dr. Abbott was preparing a paper embodying his findings which was to be illustrated with his drawings, but, becoming more and more occupied with a rapidly growing practice, he gradually drifted away from his project and failed to establish the truth of his thesis. Now, curiously enough, this is the recognized means of determining the ages of fishes. Had not Dr. Abbott become so absorbed at that time in the practice of his profession, it seems certain that he would have carried his studies far enough to have become a recognized pioneer in this scientific, but practically important, line of research. Dr. Abbott had a scientific, inquiring type of mind, but he allowed his profession to stifle all outside interests. Today whenever I chance to open a work on ichthyology and see the illustrations of fish scales, depicting the regular series of striae, my mind goes back to the beautiful collection of drawings that Dr. Abbott made so many years ago.

In closing I wish to add my appreciation of the honor paid by you tonight to the small group of Academy Founders gathered around this able (Applause).

DR. GEIST (introducing Dr. Davis): In 1887, I was a nine year old boy living in St. Paul. Our home was situated on the street running between St. Luke's Hospital and St. Joseph's Hos-

pital. I recall seeing Drs. Wheaton, Stone, Fulton, Gillette, Ohage and others, passing by in their buggies, vying with each other as to who had the "classiest" rig. Of these, I think Dr. William Davis' outfit attracted my attention more than the others; possibly because he had the best horse. I take great pleasure in introducing Dr. William Davis, of St. Paul (Applause).

DR. DAVIS: Mr. President, Members and Guests of the Academy: An old camp meeting preacher introduced his sermon with the modest statement that he would now proceed "to limit the illimitable, to fathom the unfathomable and unscrew the unscrutable." The unscrutable which I propose to unscrew is the beginning of the Academy. Previous speakers have given you their version. I will tell you now just how it was begun.

In October, 1887, the late Dr. Perry H. Millard came to the office which I shared with Dr. Witherle and told us of a plan to found an Academy of Medicine, made up of twenty men from St. Paul and twenty from Minneapolis, to hold monthly meetings alternately in the two cities. Dr. Millard was a great getter-up of things. It was largely through his instrumentality that our State Medical Practice Act was brought about, and Minnesota was one of the first states to pass such a law. Then, too, he was foremost in establishing a teaching faculty at the Medical Department of the State University. There had been a medical faculty but it had been a paper faculty only. Dr. Millard accomplished the difficult task of getting the faculties of the St. Paul Medical School and of the Minneapolis Hospital Medical College to come to such an agreement as to unite and form the present Medical School of the University of which we all are justly proud. When he told Dr. Witherle and me about the proposed Academy and said "and you two gentlemen are invited to join," I was very glad to accept, for at that time the local medical societies were at a very low ebb. The profession in Minneapolis were divided into two hostile camps, that fought one another tooth and nail. Many of the good men would not belong to the Hennepin County Society and had formed a new one, the Minneapolis Society of Physicians and Surgeons. Indeed, the antagonism was so bitter that a Minneapolis doctor whom I had known in the East, told me seriously that he believed some of the men in the other camp had tried to instigate a malpractice suit against him. In Ramsey County we were more harmonious, but there was no enthusiasm for the Ramsey County Medical Society, which met around in doctors' offices, often cheerless and dimly lighted rooms, usually with no program prepared and with the scantiest attendance. Indeed, of one meeting the secretary, Dr. Spencer, made the report that those present were the president and secretary and his, Dr. Spencer's, dog Peter, and he drew a picture of Peter on the minutes, a picture which is on the records today.

From the start the Academy was a success although it suffered from several handicaps. For one thing the only transportation between the cities

was by the steam railroads which ran half-hourly trains up to nine o'clock at night, and less frequent trains after that. Then, too, there was sure to be a preponderance of the members from the city where the meeting was held. But when, three years later, through cars began to run on the street railway between the two cities, and when the meeting place was changed to the Town and Country Club, and best of all when the automobile came along and made access to the meetings quick and easy for us all, the attendance grew to such a point that at the April meeting the Secretary reported that over fifty members had been present at the March meeting, and I am sure there were fully as many in April, while as for the enthusiasm, that leaves nothing to be desired.

There is an excellent story I read once called "The New Minister's Great Opportunity" which tells how a young minister, called to a country parish, found that almost the first duty expected of him was to conduct the funeral obsequies of the village patriarch, old Uncle Capen, who had just died over one hundred years old. And everyone said what a wonderful chance this was for the new minister to tell about Uncle Capen's remarkably long life. But when the minister came to look about for material for the expected eulogy he found very little to help him. For Uncle Capen had led a most colorless life. His occupations had been chiefly sawing wood and whitewashing, and he had much preferred to sit by the kitchen stove doing neither of these. He had taken no active part in social, civic, or political life. So when it came to the funeral, the minister spoke of the great age of the departed and then proceeded to tell of the great changes that had come during his lifetime. He described the invention of railway trains and steamboats, of the telegraph, of photography, and other inventions, and his hearers were delighted with the address. But afterwards one of the parishioners said to the minister "I enjoyed your remarks at the funeral but there did not seem to be much about Uncle Capen in them." "No," said the minister, "but you must admit that I did not say anything that was not so."

Now I propose to borrow a leaf from that minister, and instead of talking about the first members of the Academy and perhaps saying things that were not so, to look back at the changes that have taken place in medicine during the forty-three years of the Academy's lifetime. First of all I think it will be interesting to see what diseases headed the death list in 1887. Some of you will not be prepared to hear that the chief cause of death was cholera infantum, a disease that has disappeared entirely from medical nomenclature. And when we add the deaths from the related diseases, colitis, enteritis, enterocolitis, and gastroduodenitis, with moreover the large number of deaths ascribed to convulsions which were really the end result of diseases of the same class, the total is over four hundred, more than twice that of the number of deaths from the next on the list, pneumonia. Cholera infantum and these allied diseases are all grouped together today under the title of the diarrheal diseases of infancy, the total deaths from which in St. Paul last year were sixteen. I am giving you the figures of St. Paul. Those of Minneapolis would be a little different,

except that there was more typhoid there at that time because the city drank untreated river water.

The second cause of death, pneumonia, holds high rank today, being third in last year's list; but the third, typhoid fever, accounted for but four deaths last year. Tuberculosis of the lungs, then listed as phthisis, was fourth, and that has dropped now only to sixth place. The next, diphtheria, caused only five deaths in 1928. Our list today is headed by heart disease which was then eighth, causing fewer deaths than infantile convulsions. Next to heart disease, cancer now prevails. In 1887 cancer held sixteenth place. Certainly medical science has much to be proud of, in that it has practically abolished three diseases that were prime causes of death at the time of the birth of this Academy.

The hospitals of 43 years ago were small and few in number, often merely dwelling houses made over for hospital purposes. Except during the typhoid season they had few medical cases and very few confinements. Today about four fifths of the births take place in hospitals. Except for the insane there were no special hospitals like those for tuberculosis and for crippled children today. Even the hospital for the insane was more often called an asylum than a hospital. There were no specially fitted operating rooms with their white enameled furniture, their sterilizing rooms, gloves, caps, and masks. If gowns were worn they were chiefly to protect the surgeon. Anesthesia was with chloroform or ether as the surgeon chose, and the choice between the two was about equal. Cocaine had just appeared, but was used chiefly in eye operations. Local anesthesia came much later. The present day clinics had not come into being. Will Mayo had been in practice but four years and Charlie Mayo had not even taken his degree, and the great clinic whose buildings rise like landmarks from the prairies of Southern Minnesota had not even been dreamed of.

That was the era of antiseptics. Carbolic acid was going into the discard and bichloride was taking its place. For hand disinfection this was used in the strength of 1-1000, for irrigation from 1-2000 to 1-4000, while instruments were sometimes put into solutions as weak as 1-15000, which could have had little germicidal power. Asepsis and sterilization by heat came several years later. This was curious, because in 1886, Lawson Tait, of Birmingham, had published a series of 139 consecutive abdominal sections without a death. These statistics never were questioned, as in each case reported he gave the initials of the patient's name and the name of the physician by whom the case was referred. At this time Lister and Spencer Wells were satisfied with 85 to 90 per cent of recoveries. Lawson Tait scorned chemical antiseptics but he was scrupulously clean. He used water from the tap to wash out the abdomen, and said he sometimes put a little carbolic acid into the bag of sponges to keep out the flies. The sponges, by the way, were real sea sponges, washed as clean as possible after each operation and used again. Yet no one learned from Tait that cleanliness including boiling water was the real thing.

It was only a year before the date of the Academy's birth that Fitz, of Boston, gave to the world

the word appendicitis, and showed that what was then called typhlitis, perityphlitis, or often only inflammation of the bowels, was really a diseased appendix. Even in 1887, operation was rarely done except in the presence of a tumor or for manifest peritonitis. What a boon that word appendicitis has been to the profession! Who can measure the value in dollars and cents?

Ulcer of the stomach, now so common, was diagnosed but seldom in those days. The books spoke of it as uncommon and discouraged its diagnosis unless hemorrhages were present. Ulcer of the duodenum was rarer still. Of course there was no x-ray, and other instruments of precision like the sphygmomanometer and the electrocardiograph had not been invented. Infantile paralysis in epidemic form was not known, nor was it regarded as communicable. Until 1889 there had been no epidemic of influenza for forty years, and no one had seen it until it appeared that winter.

In obstetrics there have been great changes. In proportion to the number of births, there were, in 1887, ten times as many deaths from puerperal sepsis as there were in 1928. Most remarkable is the frequency of Cesarean section today. In St. Paul the first successful operation of this kind was not done until 1889. Today Cesarean section is done for slight degrees of dystocia, for placenta previa, for concealed hemorrhage, for eclampsia, for almost no reason at all, or because mothers think it easier than normal childbirth. Indeed it is getting so popular to have babies come into the world by the front door, that the lying-in wards of our hospitals may be obliged to put out the notice often seen at the entrance of apartment houses, "All deliveries must be made at the rear."

Of the cults and systems of medicine, homeopathy was active in 1887 and we were still mistakenly fighting it. Now that we consult with him and welcome him to our societies, the homeopath is becoming a rare bird. Osteopathy then was in its infancy, but as he grows up the osteopath is getting educated and no doubt will eventually become merged with us like the homeopath. Christian Science was already active, but that is only our old acquaintance, faith cure, dressed up in the ungrammatical platitudes of Mrs. Eddy. Of quacks, we have had John Till in Wisconsin, plastering the backs of thousands, and gathering enough dollar bills to plaster his house inside and out. In California we have seen Abrams become a millionaire with his electronic device. Another quack whose name escapes me, but who reaped a great harvest by pretending to make a diagnosis by examining a drop of the blood, reminds me of a story told here some thirty years ago by our dear old friend, Dr. A. W. Abbott, about a quack named Dr. Jack who made his diagnosis by examining a specimen of the urine. On one occasion a man brought him a bottle of urine to examine. The quack looked at it and said, "This is your wife's urine." "Right," said the man, "What is the matter with her?" The quack pondered a moment and then said, "She has fallen down stairs." "That's right," said the man, "how many steps were there?" "Nine," said the quack after a moment's hesitation. "You're wrong," said the man, "there were twelve steps." The quack looked at the bottle again. "Did you

bring me all the urine your wife passed," "No," said the man, "I couldn't get it all into the bottle and had to leave some behind." "Well," said the quack, "those other three steps were in the rest of that urine."

Cults may rise and disappear, quacks may flourish for their short day, but the science of medicine goes on like a mighty wave, not crushing all that lies in the path like the steam roller of the politician, but lifting up and absorbing to itself all that it meets that is good. To this progress the Academy has contributed its full share during the forty-three years of its existence. I am proud to have been one of its founders, and I predict for it a long continued career of usefulness, by contributing to the enjoyment and professional advancement of the medical men of this part of the Northwest (Applause).

DR. GEIST (introducing Dr. W. A. Jones): The next speaker whom I am about to introduce needs no introduction. We all know him and love him. We have just heard Dr. William Davis, who was the first editor of the JOURNAL-LANCET. It is fitting for us to hear from the present editor of that publication. I take great pleasure in introducing Dr. W. A. Jones, of Minneapolis (Applause).

DR. JONES: I hardly know where to start in an attempt to talk, but I am very much impressed with Dr. Davis' talk on the diseases of those days and the fact that he did not mention marasmus. No one knew what it was. A nonmedical man started an investigation to find out what it was. Since then it has disappeared entirely.

I recall a great many incidents in my brief career which were very interesting. I remember once I was consulted by a medical man who had a lady patient with him. He said he had studied the case very carefully and thought it was a case of inflammation of the prostate gland.

I want to tell the Academy that I am one of the proud members of this organization but I did not remember that I was one of the founders of it. I am very glad to be a member, and have watched its progress and enlargement since 1887. It doesn't seem possible that a man could get along with so many medical men so amicably. I want to extend my thanks to them, and I hope they will always be successful as physicians and hope they will keep up their membership not only in this organization but in the State Society and the American Medical Association (Applause).

DR. GEIST (introducing Dr. R. O. Beard): The next speaker is also known to most of us. There are few of us in this room who did not receive instruction from him; instruction, the value of which we still appreciate. The chief memory I have of his lectures is that of a continuous flow of oratory. He, too, seems to have found what Ponce de Leon searched for in vain. I take great pleasure in introducing Dr. R. O. Beard, of Minneapolis (Applause).

DR. BEARD: Mr. President and Friends of the Minnesota Academy of Medicine: As one of the Founders of the Minnesota Academy of Medicine, I want to assure its members of our deep appreciation of the honor you have paid to us all, and alike to those of us who are living and to the lasting memory of those who have been lost to us during the forty-three years of the life of this remarkable body.

There were forty charter members of the Academy. It gives us pause and it quickens the embers of still warm remembrances in our minds to recall the fact that thirty of these forty men have already gone "to that bourne whence no traveler returns."

It is something for which we shall be glad and grateful to the end that we have the privilege of association and the joy of friendship with those whom we knew so long, whom we loved so well, and have so early lost. It is much to have worked, hand in hand and shoulder to shoulder, with men so rare as Abbott, MacLaren, Wheaton, Stone, French, Ritchie, Senkler, Clark Stewart, Nippert, Dunn and the many others who answered to our monthly muster roll.

It is a happiness to know that these men, each in his own measure, were permitted to "snatch their narrow portion of time out of eternity"; that they were fitted "to do the work of men while they bore the form of them"; that they contributed greatly to the growth of the profession they loved, rendered their large service to mankind, lent something to the literature of medicine and to the literature, at large, of human thought.

We reverently salute the memories of these gone, but unforgotten friends!

The dawn of history is ever shrouded in more or less of mystery, and men have had to rely, more or less, upon tradition and recollection for the initial setting of any event. It is inevitable that in this half light of other days the details we recall may, in some degree, differ. Great minds, it is said, move at a given time in one and the same direction.

I have been asked to give you some reminiscences of the Academy's past; and at the risk that reminiscence is the somewhat faded fruit of the decadent years, I must needs comply with the request.

I remember then, a certain meeting of the Minnesota State Medical Society, at Duluth, in the spring of 1887. I recall the fact that, on the return trip, French, Hunter and I sat together, and that on the way French initiated a proposal to establish a select association of medical men, and that the three of us discussed the possibility. I remember that, within a few days of our return, the same three met in Hunter's office and talked it over again. Then and there it was proposed that the Academy be limited in number and that its active membership should be drawn equally from the Twin Cities. I recall that we proposed three St. Paul conferees, and that these three were Fulton, Wheaton and Stone; that French undertook to suggest the matter to these three brethren. Later, the six of us had a meeting which extended from Alex Stone's office to the Windsor Hotel in search of refreshments, and that other men were proposed by each and all of us. Among them were Ritchie, Riggs, and dear old Senkler, of St. Paul; and Abbott, Allport and Dunsmoor, of Minneapolis.

On October 7, as the records show, and here actual history begins, an organizing meeting was held in St. Paul, at which nine Minneapolis men and seven St. Paul men were present. On October 12, a second meeting completed the organization.

It is a personal pleasure to the speaker to recall that he was privileged to write the Constitution, By-Laws and Standing Rules then adopted. The minutes of succeeding years show that while these documents were revised from time to time, they remain today the structural basis upon which the Academy was built and upon which it has rested ever since.

On November 5, 1887, the first meeting of the Academy was held, at which the first officers of the Academy were chosen. They included Dr. John F. Fulton, as President; Dr. A. W. Abbott, as Vice-President; Dr. LeGrand N. Denslow, as Treasurer; while Dr. Edward S. Spencer and the speaker were jointly named as Secretaries.

For a year these two secretaries collaborated, and the satisfaction of working with so essentially a Nature's gentleman as Edward Spencer is to be recorded. At the end of the first year, Dr. Spencer was assigned to the Treasurership and the speaker became the sole Secretary. In still another year, he was elected Secretary-Treasurer, a joint office which he filled for fifteen years. He may, perhaps, be permitted to boast of the possession of the unshared honor and the privilege of having served, in turn, as Secretary, Secretary-Treasurer, Vice-President, President, Fellow, and the Honorary Fellow, as, by your courtesy, he now ranks.

The pivotal point upon which the speaker believes the wonderful success and stability of the Academy to have turned is to be found in the stated purposes of its creation, viz., the cultivation of medical research and the association of medical men upon a basis of good fellowship, professional ability and literary merit. So strictly has entrance to the Academy been guarded by this statement of its objectives that the initial quality of its membership has been in its entirety continuously maintained. It has always been esteemed an honor to belong to The Minnesota Academy of Medicine.

In a time of professional differences and disintegration, the Academy has embodied a satisfying harmony. In the face of a progressive diminution of educational standards in the State, it has stood for lofty ideals. In the midst of current commercialism, on the one hand, and ethical fundamentalism, on the other, it has remained staunch to the highest traditions, translated into the modern spirit, of medicine. In a day when pseudoscientific research has easily passed muster, it has exercised real discrimination of medical values.

May I be permitted a word of greeting to my fellow founders, all so warmly welcomed to this table:

I am glad that we still belong to The Minnesota Academy of Medicine. Although we need not now bear the burden and heat of its developmental years, in which we carried our fully accepted share, we may continue to take our part in the councils which

are functional to age and to grow young in the fellowship of its sustaining youth.

We have lived in a past when Art has added much to Science and Science has carried Art aloft upon its lifting wings. We have lived in a present marked by vast material and mechanical progress and by still greater illumination of the human mind. We look out upon a future which promises the prevention of the human ills we have wrestled with, the advancing betterment of human being, the increasing longevity of humankind.

It is ours to hold an enlarging and enlivening memory of the days gone by; to grow still more greatly under the constantly expanding influence of these contemporaneous years; to vision with widening philosophy, with still gathering wisdom, with deepening understanding, the coming days.

It is not permitted to us to halt, for if we do the rapidly rising waves of this living present will pass us by. It is ours still to keep step with the constantly compelling movement of our times.

Like the native music of America, our lives are set to a minor key, and for the identical reason that gives us this native chord. The old age of the individual is like the old age of the race. Its face is turned toward the setting sun. But that minor key is the most beautiful in the entire gamut of musical sound. We may beautifully keep in tune with it.

We have reached the years when we may stand, if we will, by the lift of our past experiences, upon "those summits whence the eye sees the world as one vast plain and one boundless reach of sky."

In sweetness, quietude, and seriousness, it remains to us "so to live, that when the summons comes to join the innumerable caravan that moves to that mysterious realm where each must take his chamber in the silent halls of death, we go not like the quarry slave at night, scourged to his dungeon, but, sustained and soothed by an unfaltering trust, approach our end as one who draws the draperies of his couch about him and lies down to pleasant dreams" (Applause).

DR. GEIST: Eternal Youth! Dr. Beard, you have made all of us feel young again. As I listened I was recalled thirty years back to that old physiology lecture room and its hard, hard benches; those straight back affairs!

I now bring this meeting to a close. It has been fine to have had with us our beloved Founders. We regret much that some of them were not able to be with us.

Founders! May you live long and may we enjoy your presence for many years to come. All Hail to You!

DR. THOMAS ROBERTS then showed two reels of moving pictures of Minnesota's wild animal and bird life.

R. T. LA VAKE, M.D.
Secretary

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
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The Hennepin County Medical Society
The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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MINNEAPOLIS, AUGUST 15, 1930

BRITISH MEDICAL ASSOCIATION MEETING

A national neuropsychiatric meeting will be held in Winnipeg when the British Medical Association convenes there August 26 to 29 inclusive. A very convenient means of taking care of those attending from the Twin Cities has been arranged. A special train will leave over the Northern Pacific and one can engage a berth which may be used for hotel purposes during the entire trip. Round trip and lower berth is \$30. From what we know of the men coming from the British Isles they will furnish a great deal of pleasure and instruction by their coming. It will give some of us an opportunity to meet again these old friends and acquaintances, and the meeting should be a very successful one.

At the same time an orthopedic meeting will be held; but, of course, the neuropsychiatrist doesn't see anything very entertaining about a lot of people with sore feet. He may forget the fact that they suffer much more than they care to express.

In regard to the number of men attending the neuropsychiatric section, the outlook is very good. It gives the man of America an opportunity to hear the man from England, Scotland, Ireland and Wales. It is a good thing for the foreigner, too. He comes over here and finds

a little different class of psychiatrists than he might have known before, so the meeting promises success all round.

The Northern Pacific leaves St. Paul at 5:30 p. m., Minneapolis at 6 p. m., and arrives at Winnipeg at 8 a. m. On returning it leaves Winnipeg 5:30 p. m., arrives at Minneapolis 7:30 a. m. and St. Paul 8 a. m. Railroad service is very good, as everyone knows the Northern Pacific.

TOO MUCH CRIME

This topic may seem a little unnecessary when everybody reads the newspaper or the medical journal and much is to be found there on this subject.

Most recent among the victims is a wife and son of a crazed war veteran. The wife attempted a year or more ago to have her husband committed but interference was offered by the man's brother. The brother interfered, took him under his care for several months and recently permitted him to return to his family, thinking perhaps he was handling the situation in the best possible way.

A few days ago he killed his wife and child with an axe while they slept, and still the life of the criminal goes on. Fortunately he won't be where he can do much more in that line. This case illustrates the necessity of a psychiatric examination of these people and the authority for someone to take them in charge. Patients of this type should be committed to an institution of some kind before they commit crimes. The majority of people are becoming calloused; they read the headlines and find that so-and-so has been killed and comment on it and then dismiss it from their minds.

It would seem as if some official of the state should be endowed with authority to look after such people and prevent the waste of life that results from these cases. The man had a good face; if one can judge from a photograph he wasn't criminally inclined. However, when the time came and the opportunity was at hand he went out, procured an axe and killed wife and child. The newspapers print the picture and are very entertaining; they show a man with several children, and go on with the details of the crime.

The editor hopes the next legislature will go into this matter and handle it effectively, creating, if necessary, a hospital for the criminal insane. Some years ago they had such a place at St. Peter but they were unable to carry on their

work successfully and the inmates were transferred to Stillwater to the state prison. If someone might be endowed with the authority to exercise good plain judgment the man who commits such a crime as this one would be lying beside wife and child. This may seem like a harsh statement; but it is the one effective measure to take in meeting with the wave of crime that is sweeping the country, wholesale murder.

At Bismarck, N. D., the bank has been looted of \$75,000 lately. Fortunately the bank was insured against this possibility. It is to be hoped that other banks may be secured against the same thing; but there is the matter of the enormous premiums to be paid. Think, too, of the heartbreaking episodes that may occur before this is paid.

We might as well admit that the world is full of morons, criminals and partially insane people who ought to be looked after by the state. We know too that this will not be accomplished. Mr. Hoover has his grain interests to look after and he and Mr. Legge feel that they are doing something for the people; but somehow the people do not agree. Now it is the weather that is being investigated. That means for the public to get down and pray for rain. The number of robberies that have been committed is due in part to mob operations and in part to hunger from which these people suffer. So, perhaps, we can't lay it all to Mr. Hoover.

The condition must be relieved by a man in authority and without too much red tape. Any undertaking of this kind should be gone into with full authority to carry through, but we venture to say that the first man accused will weep and someone will feel sorry for him and the movement will fail. Out of the entire number of murders committed in the United States in the past year one or two have suffered death. In England it is quite different. Criminal proceedings are commenced at once and carried through to completion in a few days, and once found guilty there is no commuting the sentence.

SPEAKING OF THE HEAT

This is a questionable subject and we doubt that we will get any credit for dictating on such a topic, but we find this an easy subject since it is foremost in everyone's mind at present. Those of us who have been born in Minnesota and have experienced all the heat through many years here can say truthfully that very little serious effect has resulted at any time due to the heat directly. But there are many people

expecting to fall down somewhere, somehow, from exposure to the heat. As a matter of fact their complaints begin and end largely in their own minds. Someone suggests to us that it is very hot today; the suggestion is permitted to grow by a constant repetition of one to another and we are all talking about and keeping it ever before ourselves and others.

During the last ten years we have had two serious hot waves, one in 1921 and the other in 1923. We might teach ourselves and others not to complain of the heat, that it is natural and will pass. We suppose that we will all continue to complain of the heat here until we get to a very hot place and are able to make a comparison in favor of the heat we are experiencing now. In leaving Madrid, Spain, on July 20, 1921, we experienced a temperature of 144 degrees, incredible as it may seem. A recent report from Brazil shows that the temperature was 169. These extremes of temperature occur in terms and we have been through these heat terms before and can go through them again. A few people who have diseases of different sorts lingering over them are prostrated and die as a result; but as a rule the trouble is with keeping it ever before us that it is hot. Most of us do not suffer any severe effects from the heat itself. If one is occupied in some way there is a chance to forget the heat and troubles. We have reduced our clothing to the minimum and made ourselves as comfortable as possible. We must follow the example of the people in the tropics in this respect in wearing light, comfortable clothing and making ourselves comfortable in that way, and beyond that there is little to do about the heat. We can console ourselves by thinking, too, of the Esquimo. They are obliged to wear fur with the fur side inside, but, of course, they are accustomed to that and we will probably not have to adjust ourselves to it so long as we remain in Minnesota. The various offices, business places and professional men's quarters are more or less heated at this time by the fact that most of the buildings get heated through during a long hot spell and it takes some little time for them to cool off thoroughly. One must go about his business as usual and forget for the time that it is so hot. Take an occasional glass of cold tea or cold beer (if it might be permitted) and go on as usual.

If you chance to be one these people with a sensitive mouth or throat membrane you may suffer some irritation of the throat by the cold drink and experience a fit of coughing. The same is true in drinking hot soups (which would

not be the case at this season, however), an irritation results and brings on a spell of coughing. So, unless you trickle it down in the right way and right place you are apt to cough, but that too will pass.

Minneapolis and St. Paul have suffered more with the humidity perhaps than many other points. The weight of the temperature is enough to make one cough or swear or do almost anything else. You will stop coughing when there is a proper dilation of the stricture of the throat and mucous membrane.

THE QUESTION OF YEAST

We hear much about yeast and its curative value, and very often we are obliged to confess the truth of it. We may admit that yeast is a something that perhaps contains the substances of a laxative, so it is classed with the cathartics. We hear of people who take yeast regularly, sometimes they eat it and sometimes they dissolve it in warm water and this we consider the proper way to take it. Then someone comes along who has taken yeast for a number of months and is still without results; he is followed by someone else who is sure he was helped by yeast three times a day. Who wants to eat yeast or drink it three times a day?

The men who make beer or used to make it used an enormous amount of yeast. After the institution of prohibition the makers of yeast advertised it widely as a medicine, so it is now a medicine which is used freely. The *Journal of the A. M. A.* of June 14, 1930, has an article on the subject and it hardly justifies it even among the cathartics, but says it might more appropriately be found among the laxatives, or laxative diet along with bran, honey and prunes. The editor of *THE JOURNAL-LANCET* begs to differ with the *Journal of the A. M. A.* regarding the laxative qualities of prunes because they are too acid and they remain acid all the time. The presence of vitamine B in yeast makes it of special value in skin eruptions due to the mighty vitamine B deficiency. That it is just as effective in other forms of skin trouble such as acne or furunculosis is doubtful. There is little doubt, however, but that the psychological action of yeast has a therapeutic value; but its real value is much less than has been supposed. But people will continue to take it just as long as the manufacturers continue to make it and advertise it. Let us try to get away from these so-called patent food articles. Use something better. If we were to cultivate the habit

most of us would find that drinking of more water would do just as well as getting the yeast habit. The grains of yeast taken down as many take them by chewing the dry yeast are a source of irritation or without any natural effect at all.

DR. L. L. TEN BROECK

The tragic death of Dr. L. L. Ten Broeck occurred in his apartment at the Harmon Hotel during the past week. Dr. Ten Broeck conducted an extensive practice in Minneapolis for a number of years. Failing health is given as the cause of his tragic death, the result of taking carbolic acid. Dr. Ten Broeck's name came before the public a few years ago in connection with the Rev. B. Birkland case, but he was exonerated from any connection with the death of Rev. Birkland and in a later suit he was rendered a verdict brought against members of the Birkland family for causing his arrest. He got a small verdict—1 cent or a few more.

MISCELLANY

A SECRETARY OF PUBLIC HEALTH

WHEREAS, the health of its citizens is our Nation's greatest asset; and

WHEREAS there is now much duplication of effort and division of responsibility in regard to health matters, as now conducted; and

WHEREAS Labor, Commerce, Agriculture and other matters of relatively less importance are represented by an officer in the President's Cabinet, while the Nation's health is not so represented, although such representation has been recommended by the American Medical Association and endorsed in their platforms, from time to time, by both of the major political parties; and,

WHEREAS it seems reasonably certain that the various health activities now in operation could be more efficiently conducted if coordinated under a responsible head; therefore be it

Resolved That the American Medical Editors' and Authors' Association, in convention assembled (at Detroit, Michigan., on June 24, 1930) recommends and urges that steps be taken immediately for the creation of a Portfolio of Public Health, in the Cabinet, and that a copy of this resolution be forwarded to the Secretary of State, Washington, D. C., to the secretaries of all National and State Medical Organizations and to all members of this Association.

Signed, for the Association:

H. LYONS HUNT, Pres.

E. VANDERVOORT, Secty.

**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Viletta Roche, Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Botulism

This Department has recently been called upon to render assistance in several cases of botulism. This disease is so rare and yet so serious when encountered that we have thought it prudent to submit a brief resumé of the cases reported.

A disease which, during a period of 22 years prior to 1920, had been reported in but some 150 instances, and which resulted in the death of 111 people among a hundred million persons,* cannot be compared with other diseases in magnitude and yet its seriousness warrants special consideration.

A review of the vital statistics of North Dakota does not reveal a single case having been previously reported as a cause of death. It is to be considered that there has not been a case of botulism reported up to now in North Dakota.

In June 23, Dr. M. W. Lyons, of Sentinel Butte, informed the State Department of Health that he thought he had some cases of botulism with already one death. The end result proves that Dr. Lyons is to be congratulated on making an accurate diagnosis of such a rare condition so early. In the absence of our Epidemiologist who was on a vacation, investigations were made by Dr. James Perkins, Epidemiologist of the Minnesota State Board of Health, who at the time was engaged in special work for this Department. It was learned from Dr. Lyons that four cases of botulism existed in the Matt Zimmer family, at Golden Valley, of which one had already died.

Mrs. Zimmer, age 46, together with Frances, Valeria and Morris Zimmer, ages 9, 7 and 5 years, respectively, were alone at home on the week end of June 21. For lunch on Saturday, June 21, they ate freely of a salad into which some home canned string beans from the previous year's canning had been incorporated. The same salad was again served for supper. Mrs. Zimmer became violently ill at 11:30 p. m. on the same day, Frances on the morning of June 23, and Valeria and Morris on the morning of June 24. All patients became ill with vomiting and cramps in the abdomen. Mrs. Zimmer felt improved the following morning and was able to milk the cows. She saw two cows where there should have been but one, however. There was no diarrhea, headache, fever or pain. Sensorium remained absolutely clear until the time of death. Diplopia which changed into dimness of vision existed, also difficulty in speech preceding complete aphonia; patient unable to protrude tongue beyond teeth; unable to cough mucus from throat; suffered choking spells and became cyanotic prior to death. All patients said they "felt all right." Mrs. Zimmer died at 6:30 a. m., June 23, and the

three other patients within 48 to 60 hours from the time of the onset of illness.

The diagnosis of botulism was confirmed. The jar of home canned string beans which went to make up the salad was determined to be the direct cause of the disease.

This Department is preparing a special record of the cases and compiling all recent data on botulism which we will gladly mail to any physician on request.

Status of Sewage Treatment in North Dakota

Sixty-eight municipalities within the State have public sewerage systems. These towns represent a population equal to 24 per cent of the total population of the State. Of the 68 towns and cities having public sewerage systems, 35 or 12½ per cent of the total population of the State dispose of sewage in streams without treatment. These figures are significant in view of the fact that approximately two thirds of the population of the state is rural. Of the 35 towns and cities that use some sort of treatment, 29 have septic tanks and 4 have Imhoff tank installations. Two cities further treat their sewage by the use of trickling filters. That sewage treatment in North Dakota is making rapid strides is evidenced by the fact that during the past year five towns have installed sewer systems, and two have improved their present plants by the addition of disinfection by chlorine to the present treatment.

Two changes have just been made in the staff of the North Dakota State Department of Health. Miss Myrtle C. Lee, statistician and director of the Bureau of Vital Statistics, resigned July 15, at which time her marriage to Mr. Alan Read, of Chicago, took place. Mr. and Mrs. Read are recent graduates of the University of North Dakota. Miss Viletta Roche, who has understudied Miss Lee for the past year, has been appointed to fill the vacancy. She will also be Editor-in-Chief of this page in the future.

Dr. Robert M. Allen, of Forman, N. D., has accepted the position of Epidemiologist and Director of the Bureau of Preventable Diseases, made vacant by the resignation of Dr. J. D. Jungman. Dr. Allen needs no special introduction. He has practiced in North Dakota for 14 years, taking an active part in the problems of the profession, and has been especially active in promoting the welfare of the North Dakota Health Officers Association. He has the distinction of being the first to be accorded the honor of "Who's Who in Public Health for North Dakota."

This Department has recently contributed material for exhibits as well as educational literature and films to Camp Grassick, the Northwest Fair, at Minot, Junior Camps and Rest Camps at

*Nelson's Loose Leaf Living Medicine, Vol. 2, p. 619.

Hettinger, and to the Fair at Fargo. This service will be gladly given upon request.

The preschool conferences conducted at the Northwest Fair at Minot were an outstanding success and deserve special mention. This Department conducted these conferences for several years, but found it impossible to do so this summer. Dr. Dowler kindly consented to conduct the clinic. He stated in his preliminary report that "the coöperation and assistance of practically every physician in the city was wonderful." Many outside the city assisted, and the women of Minot are given credit for the success of the health program. One hundred sixty preschool children alone were cared for.

You are urged to inform this Department of any outstanding public health activities which occur within your province. Modesty is a virtue, but we ask that you do not let modesty stand in the way of imparting what has been accomplished by you or your community that is informative and educational. We are endeavoring to develop this page into a medium for the exchange of ideas. Comments, criticisms and suggestions will be cheerfully received.

FILE A SEPARATE BIRTH CERTIFICATE FOR EACH TWIN

NEWS ITEMS

Dr. Joseph F. Borg, St. Paul, has recently returned from a six months trip in Europe.

Dr. L. R. Peck, Hastings, Minn., was recently married to Miss Dorothy Pauley, of St. Paul.

Dr. L. J. Happe, St. Paul, has moved to Marshall, Minn., and opened offices for general practice.

Dr. Carl E. Elofson has been admitted to the firm of Drs. W. G. Brown and I. D. Clark, at Fargo.

Dr. A. F. Dysterheft has recently located at Gaylord, Minn., and opened offices for general practice.

Dr. L. L. Ten Broeck, a practicing physician in Minneapolis for many years, died suddenly on August 6.

Dr. W. B. Ridell, Duluth, has moved to Buffalo, Minn., where he will open offices for general practice.

Drs. R. W. Henderson and C. E. Stackhouse have formed a partnership and opened new offices at Fargo.

Dr. L. G. Ericksen, Wood Lake, Minn., has sold his practice to Dr. R. H. Kath, formerly of Rochester, Minn.

Dr. W. R. Smith, Duluth, has moved his offices to Grand Marais, Minn., where he will continue general practice.

Dr. and Mrs. F. C. Totten, Lemmon, S. D., have returned from a months vacation in New York and Washington.

Kelliher, Minn., is in need of a doctor. This is a good farming community and a fine opening for a growing business.

Dr. M. E. Sweeley, Chicago, has moved to Yankton, S. D., and is now associated with the Hohf Clinic of that city.

Clarkfield, Minn., is to have a new hospital in the near future, as funds are being raised to start the buildings this fall.

Dr. Charles F. Disen, Minneapolis, who has been in active practice for nearly 45 years in that city, died on August 6.

Dr. C. B. McGlumphy, of the University of North Dakota, has resigned his pathology post and moved to Evansville, Ind.

Dr. H. E. Perrin, formerly at Star Prairie, Wis., has moved to Prior Lake, Minn., and opened offices for general practice.

Dr. H. J. Bartrom, Watertown, S. D., has been elected president of the State Board of Medical Examiners of South Dakota.

Dr. L. C. Kellogg, has returned from California, and will resume practice with his brother, Dr. H. E. Kellogg, at Brookings, S. D.

All of the officers of the Warren, Minn., Hospital were re-elected for the coming year, Dr. S. W. Swanson being president of the board.

Dr. I. W. Leighton, Scotland, S. D., will spend the next few months in Philadelphia where he is to take an advanced course in internal medicine.

Dr. W. P. Finney, Rochester, is the president of the Minnesota State Golf Association. The annual meeting was held in that city last month.

Dr. Warren M. Dodge, Farmington, Minn., was recently married to Miss Inez McGreaham. They are on a months motor trip in the eastern cities.

Dr. Kenneth Herbst, a recent graduate of the University of Minnesota, has become an associate of Dr. H. A. Fasbender, Hastings, Minn., in general practice.

Dr. T. F. Rodwell, Mahanomen, Minn., has retired from the U. S. Government medical service, after spending over thirty years in that line of special work.

Dr. Owen King, Aberdeen, has returned from a three months European trip. He was with the party of 100 doctors who made the trip from New York, early in May.

The Madison, S. D., Hospital has recently installed new x-ray equipment costing some \$6,000 which are equal to any to be found in any of the hospitals of that state.

Dr. Edward W. Thuerer, Billings, Montana, one of the leading surgeons of that state, died last month, the results of a severe attack of pneumonia. He was 50 years old.

Members of the Women's Auxiliary of the Madison, S. D., District Medical Society elected Mrs. R. S. Westaby, president, and Mrs. H. A. Miller, secretary, for the coming year.

Dr. A. E. Comstock, St. Paul, who was suddenly stricken with paralysis, died last month. His age was 58 years and he had been in active practice in that city for over 30 years.

Dr. L. W. Paul, who has been located at Canby, Minn., for many years, has moved to Madison, Wis., having accepted a position on the medical staff of the University of Wisconsin.

Dr. John C. Fawcett, graduate of Northwestern Medical School, and recently finishing his interne year at Ancker Hospital in St. Paul, is now associated with his father, Dr. W. C. Fawcett at Starkweather, N. D.

The annual meeting of the South Dakota Registered Nurses Association was held at Rapid City on July 28-30, with over 100 members being present. Miss Florence Walker, Waubay, S. D., is president.

About 30 members of the Northwestern District Medical Society held their annual picnic at the country club at Minot, N. D., last month. Dr. F. E. Wheelon, Minot, was in charge at the picnic and he certainly presented a fine program.

Dr. W. K. Jacoby, Mobridge, S. D., who has been confined in a Minneapolis hospital for several weeks, after his severe auto accident, was returned to his home, but it will be some weeks yet before he will be able to resume his practice.

The Minneapolis General Hospital, in collaboration with the division of public health, is to establish a ward of twenty beds in the city contagious disease hospital for the teaching of technic in tuberculosis nursing, primarily as a protection for the nurse herself.

The summer meeting of the Upper Mississippi Medical Society, which includes all of the leading physicians and surgeons of Northern Minnesota, was held at International Falls, Minn., this month. Dr. S. H. Boyer, Duluth, and others were on the program for papers.

Dr. and Mrs. E. J. Huenekens, Minneapolis, who sailed from Montreal, July 30, on the Duchess of Bedford, will spend three months abroad. Dr. Huenekens will attend the International Congress on Pediatrics in Stockholm and later will study on the continent.

A joint meeting of the Third District Medical Society was held last month at Lake Madison, S. D. A three course dinner was served, followed by papers being presented by Dr. R. S. Westaby, "United Fractures of the Tibia" and Dr. C. C. Hoagland, "Postgraduate Medical Clinics in Europe."

The Northern Minnesota Medical Association will hold their annual meeting at Moorhead, September 19 and 20. Programs are now being made up for the exceptionally good meetings that this society always holds. Dr. H. C. Cooney, Princeton, is president, and Dr. O. C. Larson, Detroit Lakes, secretary.

Dr. and Mrs. W. C. Fawcett of Starkweather, N. D., were pleasantly surprised on their Silver Wedding Anniversary, August 1, when some six or seven hundred of their many friends gathered on the high school lawn to help them celebrate the event. The Fawcetts were presented with several useful and ornamental gifts as tokens of the esteem in which they are held.

Three Duluth physicians are telling a fish story—perhaps the "hottest" one of the season. The three physicians caught some land-locked salmon at Mountain Lake, near the border. They packed the fish in ice, placed them in a gunny sack and tied the sack on the rear bumper of a car. They then started for Duluth, 150 miles away. When they got there a few hours later they found the fish had been cooked. The exhaust from the car had melted the ice and cooked the fish, at least, this is the story as told by the doctors.

Dr. Cyrus Newton Callander, one of the pioneer physicians of North Dakota, died in California on July 30. He was buried at Fargo on August 4. Death was due to heart ailment from which he had suffered for many months. Dr. Callander was born in Ontario, Can., in 1865,

graduated from the medical school of Toronto in 1897, and in 1899 located in Fargo, where he has been in active practice for over 30 years. He was an earnest worker in the Methodist church, the Masonic lodges, and a leading member of the State Medical Association.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION ANNUAL MEETING

August 25, 1930

Mankato, Minnesota

Morning Session

8:00 o'clock, St. Joseph's Hospital.

Clinical demonstration of spinal anesthesia. W. C. Stillwell, M.D., Mankato.

Discussion. C. F. McCuskey, M.D., Rochester.

9:00 o'clock, Teachers' College Building.

Clinical sections and demonstrations will be held in the class rooms.

9:00 A. M. Clinical demonstration of varicose vein injection and treatment. C. F. Dixon, M.D., Rochester.

9:00 A. M. Dermatologic clinic. H. E. Michelson, M.D., Minneapolis.

9:00 A. M. Clinical-pathologic demonstration. W. A. O'Brien, M.D., Minneapolis.

9:00 A. M. Hematology demonstration. F. J. Heck, M. D., Rochester.

10:30 A. M. Pediatric clinic. R. N. Andrews, M.D., Mankato.

10:30 A. M. X-ray demonstration. I. G. Rigler, M. D., Minneapolis; J. D. Camp, M.D., Rochester.

10:30 A. M. Uroselectan: Indications and uses. E. P. Cathcart, M.D., Rochester.

11:30 A. M. Unusual case reports. Discussion led by W. A. O'Brien, M.D., Minneapolis.

1. Hemachromatosis. J. J. Heimark, M.D., Fairmont.

2. Fat embolism. A. L. Vadheim, M.D., Tyler.

3. Congenital pyloric stenosis. B. J. Gallagher, M. D., Waseca.

4. Malignant tumor Meckel's diverticulum as a cause of asymptomatic intestinal hemorrhage. L. S. Faust, M.D., Rochester.

5. Vicarious menstruation from lungs as a sequel to pulmonary embolism following confinement. W. C. Bernstein, M.D., New Richland.

12:30 o'clock. Luncheon and business meeting at Teachers' College Building.

Afternoon Session

1:30 o'clock, Auditorium of Teachers' College Bldg.
1. The art of Medicine. W. C. Alvarez, M.D., Rochester.

2. Coronary disease with special reference to acute coronary accidents, their recognition and treatment. H. W. Rathe, M.D., Waverly, Iowa.

3. Hypertension; Case report of unusual vascular disease. Charles Koenigsberger, M.D., Mankato.

4. Backache from the orthopedic viewpoint. R. K. Ghormley, M.D., Rochester.

5. The prostate gland in a general examination. A. E. J. Solmer, M.D., Mankato.

6. Treatment of Bright's disease. Moses Barron, M.D., Minneapolis.

7. Epileptic seizures, their relationship to brain tumor. H. L. Parker, M.D., Rochester.

8. The importance of toxic goiter complicating or complicated by other conditions requiring surgical interference. C. W. Mayo, M.D., Rochester.

9. Non-mixedematous hypothyroidism. C. N. Hensel, M.D., St. Paul.

10. Appendicitis: Report of one hundred consecutive cases. Sigurd B. Gunderson, M.D., LaCrosse.

6:30 o'clock. Banquet at Mankato Country Club.

Toastmaster, Waltman Walters, M.D., President.

Addresses by W. J. Mayo, M.D.

S. H. BOYER, M.D.,

President of the Minn. State Med. Assn.

E. S. JUDD, M.D.,

President-elect of the Am. Med. Assn.

W. A. ROHLF, M.D.

President of the Iowa State Med. Assn.

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THE PROBLEMS OF CANCER MORTALITY STATISTICS

BY HAROLD E. ROBERTSON, M. D.

ROCHESTER, MINNESOTA

To the average observer, and this category would include most doctors, there would seem to be no problem. Cancer is cancer and as a rule readily recognized as such. The primary site is ordinarily a simple matter, either of direct observation or accurate clinical deduction. Its responsibility for the death of its host is, in most cases, plainly manifest. Its duration, at least clinically, is usually fairly definitely ascertainable and altogether its general characters stand out about as clearly as any other of the innumerable phenomena associated with the death-dealing diseases of the human race. Why then, carps the critic, waste time discussing a branch of vital statistics so well oriented and on the whole so satisfactory, when other much more complex questions in this field are crying aloud for clarification and solution? He may add that while the peculiar and even abnormal psychology of vital statisticians and morphologic pathologists impels them to wrangle among themselves about largely artifactual problems, for the sake of the peace (and complacency) of the rest of mankind let them keep these discussions within their own ranks and not endeavor to disturb the existing order of things, which order is the result of steady evolution of knowledge and customs and not therefore to be lightly overturned or even amended.

But this complacency alone, if there were no other reasons, would impel me seriously to question the grounds of our critic's satisfaction with the existing conditions of cancer statistics. Cancer represents a major scourge of the human race, and the terrible quality of its menace is enhanced by the fact that it is slowly but surely increasing in its incidence, and that in spite of all the worldwide study devoted to it, it remains an almost completely unsolved entity as to etiology, pathogenesis, or reason for existence. It is a disease *sui generis*, so far removed in every single characteristic from every other disease that before we can fully understand it and conquer it we shall probably be compelled to form new concepts of pathology and even establish a new branch to our language. These facts alone would readily justify this present group in gathering together to consider critically the situation which exists in this very important division of the study of cancer, namely vital statistics or the "incidence" of the disease in the broadest meaning of the term.

Our problems may be conveniently grouped in two major divisions—the first, intrinsic and composed of those difficulties inherent in the cancer itself, and the second, extrinsic and made up of the troubles encountered when dealing with "many men of many minds" and some with

hardly any mind at all.

The intrinsic problems, at first sight comparatively few and insignificant, on closer inspection become many and very, very real. For when we define a carcinoma as a destructive neoplasm arising from some epithelial structure of the body and eventually responsible for the death of its host we have only scratched the surface.

May I illustrate by a consideration of a few of the more important subdivisions of this supposed entity?

First, and apparently most elementary, are the cancers of the skin. Epidermoid or squamous-cell carcinomas, commonly and erroneously called epitheliomas, are presumably the most definite group which we have for reliability of our diagnosis. But as the skin is not per se a vital organ, death from such a cancer can occur only when by invasion or metastasis a mortal lesion is produced or by infection, sepsis finally claims its victim. Hence the secondary damage is the important factor and as such becomes the primary element of statistical inquiry. Moreover the diagnosis is not always an easy one. Granulomatous lesions of blastomycosis, lues or tuberculosis may simulate a carcinoma or even more complicated—a cancer may arise from one of these diseases of the skin and the sharing of exact responsibility becomes badly confused. Some extraneous factor often clearly underlies the origin of the cancer, such as X-ray burns and other chronic injuries to the skin. They deserve the most careful recognition. Is mycosis fungoides a cancer? Probably not, but sometimes it resembles one, and the expert is needed to differentiate them. Does skin cancer ever arise from multiple foci and if so how may its primary site be located? At least two other "kinds" of malignant skin conditions are closely related and yet must be separated. I refer to the so-called basal cell carcinoma, rarely fatal, and the malignant melanoma, practically always fatal. Both are usually referable to a congenital defect in either the hair follicle on the one hand or the pigment bearing structure of the skin on the other, and this defect often escapes detection.

Next let us consider the cancers of the breast. Here, surely, "he who runs may read," and statistics concerning them must have a high degree of reliability. But, even granting these premises, there are important problems. I have known of a scirrhus adenocarcinoma of the breast which required nearly twenty years to bring about death and a carcinoma simplex in which the whole course was a matter of a few weeks.

Surely, something besides the usual data is necessary before our knowledge of such growths receives appreciable advancement. Also, as with the skin, the cancers of the breast must kill by secondary effects, and the analysis of these is fully as important as the primary fact. The diagnosis is not always easy. Tuberculosis and, rarely, other granuloma may confuse us, and our conception of the relative importance of so-called benign conditions of the breast, such as adenomata and cystic disease, may have a profound bearing on the handling of such diseases and the control of cancers of this organ. What is Paget's disease of the breast, and what factor, if any, is largely responsible for its existence? Did the primary carcinoma of the breast start as a lump or as a bloody discharge from the nipple? Was a definite injury a preceding event or what trauma incident to child nursing did the breast suffer?

I might similarly discuss the malignant polyps of the stomach and colon, the so-called round cell or corcinoid tumors of the appendix and ileum, the sarcomatous-like, teratomatous carcinoma of the testis, the epithelial derived tumors of the brain, the branchiogenic cancers and the peculiar malignancies to which the ovary and uterus are subject. But I have said enough to remind you that in every portion of the body the diagnosis of a cancer may be fairly bristling with questions which are often difficult or even impossible of solution at this time.

Another phase of our intrinsic problem has to do with the location of the primary growth. This ordinary simple matter may be one of extraordinary difficulty. For example, an extensive so-called carcinoma of the pleura usually has its primary or mother growth concealed in the lung or even in the stomach or other distant site. In fact, according to my pathologic gospel there is no such growth as a primary cancer of the pleura, and yet such a diagnosis is frequently made. An original cancer of the liver is among the rarest of all tumors, but quite commonly the metastasis in the liver completely outshadows every possible source of its origin. In fact it is quite possible that the parent tumor may become so inhibited in its development as to be extremely difficult to locate—authentic cases are on record where it may even completely disappear.

As to duration our difficulties become even more extreme. To the morphologic pathologist accidentally discovered cancers are a matter of common occurrence. They may certainly exist

for long periods without producing a single ascertainable alteration in the well being of the individual. We know only too little about the inhibitory forces of the body which hold in abeyance, perhaps for many years, a cancerous growth. Our "history" begins with the appearance of this growth above the surface of clinical phenomena, after which time its course may be extremely rapid. Like the iceberg, however, a large portion of its "duration" may have been buried in a symptomless sea. Even the proper evaluation of symptoms has its inherent grief. When does a long story of gastric ulcer or simple indigestion become the short finale of a gastric cancer? When have the irregularities of the monopause given place to the disturbances of a uterine neoplasm? At what time did the prostate cease its obstruction by a benign hypertrophy and begin a similar obstruction because of a malignant transformation? Probably no single element of our statistical data is as full of inaccuracies as this one of duration.

But it is in the consideration of the extrinsic group of our problems that we may become virtuperatively eloquent. For here we are dealing with the mental foibles of our fellow man and his many sins of omission and commission. Psychologically speaking, human nature finds it a very easy matter to discuss and cuss his neighbor's faults, and I must admit that for the statistician, particularly he who deals with mortality returns, this same neighbor all too frequently lays himself wide open to a justly deserved scolding. For the greatest share of all the inane stupidities which the human mind may commit, the doctor who fills out a death certificate reveals himself a candidate for the front rank with the largest dunce caps. Not only is he unable to write the English language, but he can not even read it, or at least understand what he reads. His errors are so gargantuan, and he makes so scrambled a mess of the simplest sort of a questionnaire that the patient of Job and the serene humor of a true philosopher must be the essential mental equipment of all mortality statisticians, else their spleen would perforce topple reason from its throne and turn them into raving madmen. And now, having eased the pressure somewhat by letting off superfluous steam, we may more calmly approach this exceedingly human side of our problem. Our dilemma has to do with the doctor and he often fails us because of two very important facts. First, he does not realize fully what we want or why, and secondly, he does not know the real answer to our

questions and knowing that he does not know becomes purposely careless in giving the best possible substitute. Upon whose shoulders rests the responsibility for this lamentable state of affairs? Does not a certain large share come down upon this same body of civic and semi-civic health agencies? Whoever heard of a medical student being specifically instructed as a part of his course how to fill out a death certificate? What means of intelligent or sympathetic propaganda have been adopted to acquaint the practicing physician with the value of vital statistics properly collected, with the aims of this division of the census bureau, with the problems which they are so valiently endeavoring to solve? To this same doctor a governmental bureau is largely impersonal and for impersonal things he has little time or attention. What attempts are made to vitalize the dry dust of the mechanics of vital statistics, and to bring before the mind of every doctor in the land the imagination-gripping epic of our tables of life and death?

We may seem to have drifted from the field of cancer to that of generalities but these are the problems of cancer statistics and they are moreover major problems. We must have above all the intelligent co-operation of the attending physician and to obtain this we must see to it that he is both co-operative and intelligent. Our problem begins in the medical school and continues throughout the life of the practitioner. He must know what we know about cancer or at least how he can find out what we know. He must be encouraged to care fully classify the character of the malignant growths which kill his patients and to trace their origins and their effects. But beyond all he must be admitted as a partner into this vast undertaking and as such made a fully participating member of the firm with a full knowledge of constitution, by-laws and all his rights, privileges and duties thereunto appertaining.

Perhaps our forms should be changed to meet the special needs of cancer cases. I am inclined to think they should—but with such moves we must proceed cautiously. First and foremost we must never forget nor let the scientific world forget that the field of vital statistics in the study of cancer, as well as of all other diseases, is a vital component of medical research. Statisticians and pathologists are liable to develop an inferiority complex. Working backstage where the public rarely enters, laboring in the zone of the interior far from the battle line where the spectacular fighting of disease occupies the

world's attention, we are tempted by sheer isolation to minimize the basic importance of our labors and to fail to plead unceasingly day in and day out our ideas of their significance.

Our problems are then, like those of all other groups, partly inherent and as such for the time being often without a proper solution. But they are also partly extrinsic and as such have to deal with the eccentricities of the human mind and

its mode of thought. For all these there is a large promise of future ironing out. The stimulation afforded by our efforts and the huge stake created by the welfare of the human race, carry with them an adequate reward for even the humblest of workers in this vast undertaking of which we are privileged to be the active participants.

TREATMENT OF FRACTURES OF THE FEMUR

By CYRIL J. GLASPEL, M.D., F.A.C.S.

GRAFTON, NORTH DAKOTA

Fractures and their proper treatment continue to be one of the most important subjects in surgery today.

A large railroad corporation, with its thousands of employees and its millions of passengers, is certain, under our compensation and liability laws, to be frequently subjected to unjust damages by the careless and the malingerer. As railroad surgeons you stand as a protective barrier between these and the company, to protect the latter from imposition and to help adjust fairly the claims of both. It is, therefore, particularly essential that you possess all the knowledge possible concerning this important subject. Our chief surgeon¹ has recently reported that the cost of fractures to any railroad is equal to the annual reportable property damage from train accidents, or equal to one half the annual cost of injuries to persons. Such facts being true, any method which will help us improve our final results in treating fractures is worthy of study and attention. Fractured femurs stand high in the ranks of permanently disabling injuries.

The more I see of the practice of medicine the more I admire the healing power of nature, and after all, what we, as surgeons, do in the way of treatment of fractures is but an aid to nature's combative and reparative reactions.

There can never be absolute standardized methods of caring for fractures. Each case must be an individual problem. There are, of course, certain fundamental principles underlying fracture treatment with which we must be familiar, but the methods of applying these principles will vary considerably.

The first principle which we must recognize is that restoration of function is the most important object in the treatment of fractures. Lucas-Championnière taught that forty years ago, and yet, even today, such a fundamental is often lost sight of. Function must be our main objective, and the structures and joints adjacent to the broken bone require as much attention as the bone itself.

It is still generally not appreciated by the general practitioner that most fractures, and especially those with displacement of the fragments or in the vicinity of joints, are surgical emergencies and should receive immediate treatment. The old idea of allowing several days for swelling to subside before attempting reduction must be discarded, and some one has very wisely said that the time to be worried about the outcome of any fracture is within the first two hours after injury. Delay in applying traction means subsequent swelling and is the chief obstacle to reduction. Intelligent first aid should be available to all fracture cases and it is especially essential in fractures of the femur. These cases should be splinted where they lie, using a Thomas splint if possible, with foot or ankle traction. This early temporary fixation and traction diminishes pain and shock, decreases shortening and prevents damage to the regional soft structures. This cannot be emphasized too much. If shock is present it must be vigorously combated remembering our first duty is to the patient.

Under ideal conditions a complete x-ray examination is essential in fractures of the femur in order to decide what particular type of treat-

ment is necessary. It is of the utmost help in deciding whether or not operative treatment is required, whether traction should be employed and whether impaction is present. With all due respect for the older methods of examination, such as inspection, palpation and measurements, they can never be as perfect as x-ray examination, and no agent has been so helpful as the x-ray when properly interpreted, and no agent has been so misleading as the x-ray in the hands of the untrained and inexperienced. There is now recognized by the courts a legal liability for the failure to employ the x-ray as an aid to diagnosis and treatment.

Generally speaking, fractures of the femur are divided into those involving the femoral neck, 20 per cent; the shaft, 60 per cent; and the lower third, 20 per cent. The commonly accepted methods for treating such fractures are: (1) plaster spica, (2) suspension with skin traction, (3) suspension with skeletal traction, and (4) open operation, and each of these methods has its advantages and its disadvantages.

In treating fractures of the femoral neck, it is of utmost importance to know at the onset whether or not the fracture is impacted, because on this fact largely depends whether union will occur. Unless gross deformity is present, impacted fractures of the neck should not be disturbed, and there is always danger that an impacted fracture may be changed by careless handling, especially if the patient is under an anesthetic. Be certain that overlapping of the fragments is not interpreted as impaction.

It is generally recognized that the Whitman abduction method should hold first place in the treatment of unimpacted fractures of the femoral neck, providing it is carried out as Whitman has advised. He (Whitman²) has recently stated that "except in my immediate environment I have rarely seen the treatment conducted to the best advantage to the patient or the injury. Even so, the excellent results obtained furnish strong evidence of its efficiency." It consists in fixing the limb in full extension, full abduction and slight inward rotation, using a plaster cast extending from the toes to the nipples. To properly apply such a cast usually requires hospitalization, a fracture table or frame, and competent assistants, and nothing is more unsatisfactory than a poorly fitting body cast soiled with excretions. It is often not recognized that skill is required to properly apply plaster, and a poorly applied cast or one made

of poor plaster is worse than no treatment at all. It is a fact that few men are adept with plaster, and it has been correctly stated that whatever fixation plaster does produce is at the expense of pressure.

If the patient must remain at home, partial immobilization of the limb in an extended and abducted position, in a Thomas splint, with about five pounds of skin traction is often the method of choice.

Wilkie,³ of Edinburgh, has modified the Whitman method by placing both lower extremities in complete extension, full abduction and slightly inverted, and holding them in that position by a plaster cast on each foot and leg extending just to the knee. A metal brace is incorporated in the cast, extending from one ankle to the other and producing full abduction. This does away with the necessity of a body cast, thus making the patient more comfortable, and in a small series of cases Wilkie has been well satisfied with the results.

Fracture of the neck of the femur, while most commonly encountered in the aged, may also occur in children, usually of a green stick or impacted type. It may produce trivial symptoms, but if unrecognized may result in the development of a coxa vara deformity later in life. This again emphasizes the importance of routine x-ray examination even in minor injuries.

As railroad surgeons we are principally interested in fractures of the shaft of the femur, as these result largely from external force.

The method of treatment will depend entirely upon whether or not there is displacement of the fragments with deformity. The fact that no force can be transmitted through the hip joint to the point of fracture on the shaft is responsible for the fact that it is not necessary to immobilize the hip joint in such fractures.

If there is little or no displacement of the fragments, a Thomas splint can be applied with a few pounds weight of skin traction, and light massage can be instituted at once.

If shortening and displacement are present, adequate traction should be applied as soon as possible. The amount of pull depends upon the muscular development of the patient and whether you utilize skin or skeletal pull.

The question of the employment of an anesthetic is of paramount importance. It is true that in many cases no anesthetic is required, due to the fact that there is no displacement of the fragments or because sufficient traction will re-

duce the fracture and thus prevent pain. In many cases a general anesthetic is necessary to obtain complete muscular and fascial relaxation, and thus permit the fragments to be returned to their proper place. During the past two years we have been employing spinal anesthesia nearly routinely in lower extremity work, children excepted, and a degree of relaxation is obtained that is seldom seen in general anesthesia.

Granted that shortening is present and traction is necessary, we can employ it by using adhesive tape or glue directly on the skin or a skeletal pull directly upon the bone.

The advantages of skeletal traction, in brief, are that you have better control of the bony fragments and a less force is required to effect reduction; in addition it permits motion of the knee joint, and when properly applied is painless and free from complications. Its disadvantage is that it does open up a field for possible infection.

Skeletal⁵ traction is not advocated as a routine procedure to be employed in all cases of fractured femurs; rather there are very definite indications and contraindications for its use. It is especially applicable in the following types of fractures: (1) those involving the lower third of the femur where it is often impossible to secure sufficient traction by any other means; (2) cases in muscular subjects where several days have elapsed before any traction has been applied; (3) cases in which partial bony union has occurred with overriding or deformity; and, (4) cases in which lacerations of the soft parts are so extensive that it is impractical to use skin traction. This method of treatment is usually not recommended in fractures of the aged or infirm, in fractures in children, and in fractures with little or no displacement of the fragments.

Having decided on skeletal traction, shall we use the well known Steinman nail or the less known traction calipers. Modern textbooks do not go into this question in detail, although Scudder⁴ states a form of calipers that does not penetrate the bone deeply is desirable. The advantages of the calipers are that they are less traumatizing, in that they do not penetrate the medullary canal where the introduction of infection would be so disastrous, they require no general anesthesia, either for their introduction or for their removal, and they require no greater surgical skill to properly apply than the nail. Their only disadvantage, as I can see it, is they are more expensive than the nail, perhaps not always available, and unless carefully applied

slipping is possible.

The amount of traction weight depends upon the muscular development of the patient and the length of time which has elapsed from the time of injury. For an adult, from 15 to 30 pounds of traction weight is necessary. The maximum traction should be applied at once and then decreased in a few days when overriding has been corrected. It is better to apply too much traction than not enough, and no harmful results occur if the fragments are drawn apart by the traction force.

Calipers may be inserted into the condyles of the femur or into the os calcis. As a general rule application to the malleoli of the leg is unsatisfactory.

Most forms of continuous traction are combined with a Thomas splint or some modification, and suspension of the limb in an overhead frame. This lightens the nursing care, and more important still, allows the thigh and leg to be opened for inspection and massage, and for dressing wounds if such are present. In applying traction by this method, one must remember two forces are necessary, namely, the pulling force on the distal fragment and the countertraction force on the proximal fragment. This countertraction force is accomplished by a pull upon the upper ring of the Thomas splint plus elevation of the foot of the bed. It is needless to state that all forms of continuous traction require frequent and careful observation for pressure, slipping, and infection.

There are two things which are especially necessary to keep in mind in treating a fractured femur: first, shortening and angulation are to be avoided, and second, the knee and ankle joints are to be kept mobile. Anatomical perfection is, of course, desired, and can usually be obtained by a sufficient traction force applied early. It is well to remember that the femur is not a straight bone, but that it has a distinct normal anterior bowing which must be maintained. Reduction of deformity is one of the important factors in the restoration of function.

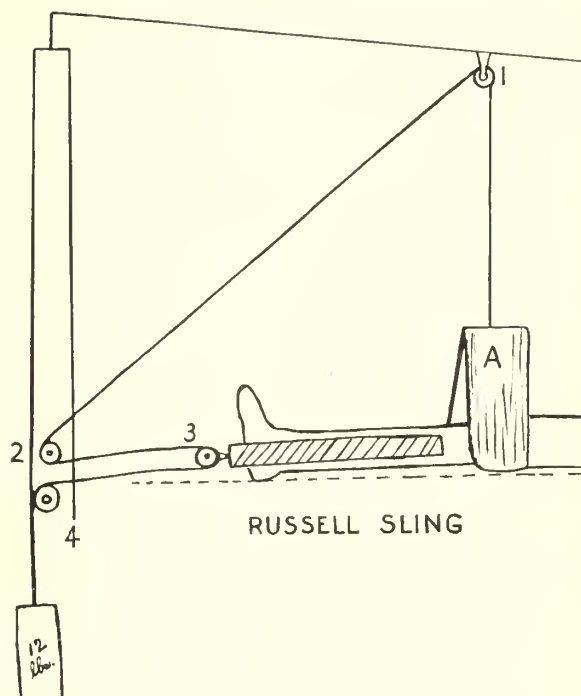
It has been, and still is, altogether too common an occurrence to have recovery from a fracture of the femur prolonged several months due to temporary stiffness of the knee joint, and statistics from insurance companies show that a large percentage of the disability following femur fractures is due to the loss or limitation of knee joint motion. This can be largely eliminated by intelligent massage and motion, the former being started at once and the latter just

as soon as it can be done without disturbing the fragments. My greatest objection to plaster is that the knee and ankle are immobilized for a long period of time, and this is often responsible for some permanent loss of joint motion especially in adults.

Most of us have forgotten the brilliant teachings of Lucas-Championnière who demonstrated that graduated massage and mobilization hasten rather than retard the formation of callus. This massage should be gentle, never deep enough to produce pain, and should extend above and below the injury, always being careful to avoid the immediate site of the fracture. Gentle passive or active motion in the treatment of any fracture is highly desirable and should be employed as early as possible. The forcible mobilization of joints and muscles under an anesthetic is mentioned only to be condemned. Function must not be lost from prolonged immobilization, because once gone it is difficult to regain.

Hamilton Russell⁶ described a method of treating fractured femurs in the *British Medical Journal*, in 1924, which is not based on fixation of any kind, but rather on neutralizing the forces of muscles which tend to force the fragments out of alignment. This method requires no fixation; the fragments are passively immobilized in that there is no force active to dislodge them. The method in no way lessens the blood supply at the site of fracture, in fact, increased activity of the thigh muscles increases the blood supply of the extremity.

To overcome the muscle forces according to this method, the patient is placed in an ordinary hospital bed, a pillow is placed beneath the thigh and a smaller one beneath the calf of the leg. A sling is made by placing a large towel about the knee. Adhesive plaster is applied to the leg in the usual way, but does not extend above the knee. A frame is secured to the bed, so constructed that an overhead pulley, and two pulleys one above the other and beyond the foot of the bed, may be utilized. A small cord is attached to the towel sling and successively led through the four pulleys as follows: first to pulley one overhead directly above the knee; pulley two at the foot of the bed; pulley three to the extension attached to the leg; and pulley four back to the foot of the bed. A weight of about twelve pounds is applied and permitted to hang suspended from pulley four. The entire musculature of the thigh, with the exception of the inward and outward action of the adductors, can then be placed in a state of balance. By applying the physical problem of the parallelo-



gram of forces, the direction and intensity of the pull can be estimated. It is evident that the direction and force can be controlled by the location of the overhead pulley and the amount of weight applied to the cord. The adductor factor is controlled by adduction or abduction of the leg.

Roentgen ray examination made at frequent intervals with a portable apparatus will guide the surgeon in determining the force and direction desired.

While adults usually require about twelve pounds of traction, children require much less.

In muscular adults a rather firm pillow can be used to advantage beneath the thigh in order to overcome the tendency toward backward angulation at the fracture site.

The results in treating cases of fractured femur by this method have shown: no cases of nonunion; no open operation; no joint changes; general alignment satisfactory; period of treatment shorter than by another method; and patients usually comfortable and coöperative.

Operative treatment in fractures of the femur is indicated when an interposition of soft tissue prevents bony contact between fragments, and when reduction and traction fail to produce a satisfactory position. This will only be indicated in about two per cent of cases, and should only be attempted by surgeons who are especially skillful and have the necessary help to carry out the refinement of detail that is es-

sential to success.

The use of the simplest method needed to hold the bone together is advised. Exposure of the fracture with simple replacing and locking of the fragments, or fixation of the fragments by the use of internal splints are the two operative procedures.

Most fractures are now and will be in the future cared for by the general practitioner, who is not especially skillful in bone surgery. The honest and intelligent use of nonoperative measures will suffice and yield satisfactory results in most cases, and generally speaking most of us can do less harm with nonoperative methods than with operative. We must not permit the general practitioner to believe that the best results in fracture of the femur are obtained through operative measures merely because that method is highly successful in the hands of a trained few. It is a fortunate thing for our patients that since the war only one fracture is operated on to fifty before the war. There are too many disasters in the operative treatment because we have been lead to believe that this form of treatment is simple and safe. It has been well said that fractures are not given the place of importance they deserve in the curriculum of our medical schools, and the recent graduate knows too much about the operative treatment and not enough about the pathology, repair, and principles which should underlie the treatment of fractures.

Generally speaking, compound fractures of the femur⁷ are best treated by skeletal traction and suspension. Small punctured wounds such as those produced by a bullet are cauterized, and, if infection occurs, which is rare, incision and drainage are carried out. In extensive laceration of the soft parts the removal of damaged tissue is indicated, but whether primary internal fixation is applied depends entirely upon the skill of the surgeon and the efficiency of his equipment. The extensive débridement such as was carried out during the war is usually unnecessary. It is in compound fractures where traction through the os calcis is especially indicated. The prophylactic use of tetanus and bacillus Welch antitoxin should never be neglected.

If we accept the excellent experimental work of Murray⁸ in regard to the healing of fractures, namely, that it is the presence of calcium locally at the site of fracture which supplies the necessary mineral salts for the calcification of the granulating tissue and thus produces bony union, it is evident that small bony fragments should

not be removed even though they are entirely detached and without blood supply. It is the local presence of calcium which insures bony union and not the presence of a high blood calcium. Bone fragments may live and be incorporated in the callus even in the presence of infection.

If you will consult the literature you will find a divergence of opinion as to when a fractured femur should return to work and when weight bearing is to be permitted. This time varies from four to twelve months. It should be appreciated that new bone formation at the site of a fracture is not mature for many months and that young callus should be protected. If this is not done, a fracture may easily end disastrously, even though correctly aligned and properly cared for during convalescence. A more general use of the walking calipers will help avoid this late complication.

The points I wish to especially emphasize in closing are:

(1) Fractures of the femur are surgical emergencies and there should be no delay in applying adequate traction.

(2) Anatomic perfection is desirable, but a patient's life and limb should not be endangered in order to obtain nice looking x-ray films.

(3) The most common cause for nonunion in a simple fracture is lack of reduction.

(4) Skeletal traction is not to be employed as a routine procedure, but rather it has definite indications and contraindications.

(5) Regional joints and muscles must be kept mobile and active.

(6) X-ray examination should always be employed both in the diagnosis and after treatment of fractures.

(7) Early weight bearing is to be avoided.

(8) The operative treatment of fractures is indicated in only about two per cent of cases, and should only be attempted by surgeons who are skilled in bone surgery.

(9) It is intelligent mobilization rather than immobilization that favors the formation of callus. Immobilization is always a condition unfavorable for the vitality of the part.

(10) Select the method of treating fractures according to your qualifications and experience. It is not so much the method as how the method is used.

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HIPPOCRATES THE FATHER OF MEDICINE*

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ST. PAUL, MINNESOTA

Athens had just recovered from the fierce and devastating battles of Marathon and Salamis. She was free and fearless, and had come to be a prominent figure in the world of power. Into her midst stepped the great demagogue, Pericles, the chief official of the Athenian General Assembly, who was destined to make Athens a city of beauty and renown. His was a most fortunate arrival, for his wise and able leadership gave freedom to thinkers and opportunity to doers. Greece was about to give to the world an epoch-making contribution in the form of a generation of men who were to revolutionize world thought. Here came Pericles the ruler, Socrates and Plato the philosophers, Sophocles the poet, Herodotus and Thucydides the historians, and Hippocrates the Father of Medicine.

Greece was flourishing with learning when Hippocrates was born. This was in 460, B. C., on the island of Cos. He was credited as being lineally descended from Æsculapius, a mythical personage (The God of Medicine). His father was Heraclides, a physician, who undoubtedly instilled into his son a love of learning which in later years was to reap such a rich harvest.

History gives us meager information as to the family life and ways of Hippocrates. Our conclusions regarding his character and beliefs are taken mostly from the writings he himself left, and, due to the fact that he was so insatiably curious about things other than himself, he left little of note as to his own personal character. Judging from what information we have, however, we can imagine him a remarkable combination of dignity with humility, for he was ever inquisitive and observing, and frank to confess his mistakes for the benefit of his followers, yet through his writings we see a nobleness of manner and an impressiveness that mark

him as a man of great distinction. He was a skeptical man, for he questioned and doubted the efficacy of systems that had met with acceptance for generations. He worked diligently, observing things most carefully and in detail, and recording them with a thoroughness and candor that characterizes a founder. He was scientifically minded, constantly searching for the truth rather than accepting dogma without close scrutiny. He sought for reasons, believing that phenomena had natural causes rather than supernatural ones. How he must have loved just to think and ponder over unsolved problems, for time and again in his writings we find original observations and deductions that have stood the test of time and analysis. He must have been of a restless disposition, as is pointed out in the following quotation from Tucker's "Life in Ancient Athens": "When Hippocrates was eager to take Socrates with him to call on Professor Protagoras, who had just arrived in Athens, he came along to Socrates' house before daylight, and as Plato has it 'gave a tremendous thump on the door with his stick.' He made Socrates get up from his truckle-bed and was all impatient to start, but Socrates replied, 'Not yet my good fellow, it is too early. But let us take a turn in the court and wait about till day-break. When the day breaks then we will go.' When they arrived at the home of Protagoras they found him strolling in the garden."¹

Hippocrates received his medical training in the health temples of Greece. The temples were called Asclepiadæ in commemoration of the god of medicine Æsculapius. The most famous of these temples were located at Cos, Epidaurus, Cnidus and Pergamus. They were splendidly located for the giving of mental peace to those distressed. As a rule they occupied a woody hillside or a mountainside near mineral springs.

*Presented before Lymanhurst Staff, May 27, 1930.

They were managed by priest-physicians, who by virtue of their intimate relations with the gods were particularly well qualified to drive evil from the minds and bodies of the sick and faltering who flocked to the temples. Their method of treatment is interesting. The patients were received by the priest-physicians who charmed them by recounting the great deeds of Æsculapius and impressed them deeply by telling of the power of their remedies. Appropriate prayers and sacrifices were made, after which the patient was further cleansed by a bath in the mineral springs and then massaged. A cock or ram was next offered before the image of the god, and the patient was then ready for the temple sleep. Mystery characterized the temple sleep. If the patient was awake the priest in the guise of a god presented himself and gave the necessary medical advice for the treatment of his condition. If the patient slept, as was usually the case, the advice came in the form of a dream which was interpreted by the priest and the necessary treatment then applied. If a cure was effected the patient gave as a thank-offering a model of the diseased part in wax, silver or gold, and this together with a tablet containing the history of the case was placed in the temple.²

It was in the midst of such quackery that Hippocrates took his stand. Noting the radical views he took as contrasted to the generally accepted methods of the day, it is safe to say that he must have wounded many by his piercing investigations in search of the truth. In writing of Herodicus, a physician of the temple, he gives this bold statement: "Herodicus killed persons in fever by promenading, much wrestling and fomentation." It must have required courage as well as a firm belief in the correctness of his observations to have said this of his former teacher.

The method of Hippocrates in the founding of his school was based on experience and common sense. Picture if you will this scholarly physician in the health temples watching carefully the methods used, noting the presence or absence of certain signs and symptoms, and observing honestly the result of the treatment. Then see him in the pursuit of his private practice visiting the sick, being careful to enquire of symptoms, diligently examining and recording accurately the signs noted, and then prescribing in a very common sense sort of a way. Time proved things to Hippocrates. As he grew older he became more and more impressed with the

value of prognostication to the physician. What were fatal symptoms and what were favorable signs? What would be the difference in the outcome of the patient with a pulmonary hemorrhage followed by a high fever, and the one with hemoptysis but no fever? These were questions that Hippocrates felt should be answerable. In his own words he states: "It appears to me a most excellent thing for the physician to cultivate prognosis; for by foreseeing and foretelling in the presence of the sick, the present, the past and the future, and explaining the omissions which patients have been guilty of, he will be the more readily believed to be acquainted with the circumstances of the sick, so that men will have confidence to entrust themselves to such a physician. And he will manage the cure best who has foreseen what is to happen from the present state of matters."³ Wise words were these, coming from the mature mind of one who recognized true values.

The immortality of Hippocrates lies in his writings. The following is a list of the books commonly considered as his genuine works:⁴

1. On Ancient Medicine
2. The Prognostics
3. The Aphorisms
4. The Epidemics I and III
5. The Regimen in Acute Diseases
6. On Airs, Waters, and Places
7. On the Articulations
8. On Fractures
9. The Instruments of Reduction
10. Surgery
11. On Injuries of the Head
12. The Oath
13. The Law
14. On Ulcers
15. On Fistule
16. On Hemorrhoids
17. On the Sacred Diseases

Time at the present occasion will not permit a résumé of each of these works. I will merely give a few generalities about them and some of the impressions gained from reading them. The book "On Ancient Medicine" is of interest chiefly as a bit of medical philosophy. His theory as to the origin of medicine is noteworthy: "For the Art of Medicine would not have been invented at first, nor would it have been a subject of investigation (for there would have been no need of it), if when men are indisposed, the same food and other articles of regimen which they eat and drink when in good health were proper for them, and if no other were preferable to

these. But now, necessity itself made medicine to be sought out and discovered by men, since the same things when administered to the sick which agreed with them when in good health, neither did nor do agree with them." Hippocrates believed therefore that medicine came to be because ailments in people drove them to seek relief.

His book "On Prognostics" is well worth reading. In great detail he mentions the meaning of the various signs and symptoms as relates to the outcome of the patient. Many of his conclusions have proved to be correct. Concerning consumptive patients he aptly said: "If the patient is to recover, the sputum should be white, equable, of one color without phlegm; there should be no fever, nor anorexia nor thirst; the alvine discharges firm, proportionate to the ingesta and the patient should not get thin." The father of medicine must have recognized the curability of tuberculosis.

His "Aphorisms" are choice bits of wisdom taken from his life's experiences and placed in as brief and concise a form as possible. This work was called by Suidas who lived 17 centuries after Hippocrates: "A performance surpassing the genius of man."

The book on "The Epidemics" consists of a number of very interesting case histories showing the care and thoroughness used by Hippocrates in his observations. The following cited case sounds much like a pneumonia which a lung abscess complicating it. Case VIII—"In Abdera, Anaxion, who was lodged near the Thracian Gates, was seized with an acute fever; continued pain of the right side; dry cough, without expectoration during the first days; thirst; insomnia; urine well colored, copious and thin. On the sixth delirious; no relief from the warm applications. On the seventh, in a painful state, for the fever increased while the pains did not abate and the cough was troublesome and attended with dyspnea. On the eighth, I opened a vein at the elbow and much blood of a proper character flowed; the pains were abated, but the dry coughs continued. On the eleventh, the fever diminished; slight sweats about the head; coughs, with more liquid sputum; he was relieved. On the twentieth, sweat; apyrexia; but after the crisis he was thirsty and the expectorations were not good. On the twenty-seventh, the fever relapsed; he coughed, and brought up much concocted sputum; sediment in the urine copious and white; he became free of thirst and the respiration was good. On the thirty-fourth,

sweated all over; apyrexia; general crisis." Our modern history taking methods could hardly improve upon this for necessary material in making a diagnosis.

His "Regimen in Acute Diseases" treats of the therapy used in acute diseases. It is mostly a matter of diet, bloodletting, purging and poulticing.

The book "On Airs, Waters and Places," tells of climate, seasons of the year, different types of water, and various countries and their relationship to the physical state of the body. It is to a great extent a speculative treatise.

His work "On the Articulations" shows a remarkable familiarity with anatomy and dislocations, as do also the works "On Fractures" and "The Instruments of Reduction." From reading these books one is led to believe that Hippocrates must have dissected unbeknownst to the public, and obtained some first hand information on the structures of the body. His descriptions show a very intelligent understanding of anatomy and osteology. Of what apparently is Pott's disease he states: "The vertebræ of the spine, when contracted into a hump behind from disease, for the most part cannot be remedied, more especially when the gibbosity is above the attachment of the diaphragm to the spine."

In "The Surgery" and "On Injuries of the Head," Hippocrates describes in detail the realm of surgery, including preoperative preparation of the patient as well as of the physician, indications and contraindications for operation, and the methods to be used. Galen, in commenting on this work remarks: "In operations of the parts of generation and on the breasts in females it is proper that the patient be blindfolded. He also recommends in certain cases, when the patient is remarkably timid, to deceive him by telling him that the operation has been put off until another day, and while in the act of making, as it were, preparation for it, to make the necessary incision." Before the days of anesthesia we may well conclude that the patient was not long in realizing the doctor's deception. Hippocrates tells fluently of the use of the trepan and the indications and contraindications for trepanning in injuries of the head. Trepanning, as you perhaps know, is one of the oldest of surgical operations. It was first practiced for the purpose of permitting a ready exit to the demons of disease that were believed to be present in the sick body. The following excerpt is an interesting passage pertaining to injuries of the head. It shows Hippocrates in the rôle of diag-

nostician and prognosticator: "When a person has sustained a mortal wound on the head, which cannot be cured nor his life preserved, you may form an opinion of his approaching dissolution and foretell what is to happen from the following symptoms which such a person experiences. When a bone is broken or cleft or contused, or otherwise injured, and when by mistake it has not been discovered and neither the raspatory nor trepan has been applied as required, but the case has been neglected as if the bone were sound, fever will generally come on before the fourteenth day if in winter and in summer the fever usually seizes after seven days. And when this happens the wound loses its color, and the inflammation dies in it; and it becomes glutinous, and appears like a pickle, being of a tawny and somewhat livid color; and the bone then begins to sphacelate, and turns black where it was white before, and at last becomes pale and blanched. But when suppuration is fairly established in it, small blisters form on the tongue and he dies delirious. And, for the most part convulsions seize the other side of the body; for if the wound be situated on the left side, the convulsions will seize the right side of the body; or if the wound be on the right side of the head, the convulsion attacks the left side of the body. And some become apoplectic. And thus they die before the end of seven days, if in summer; and before fourteen, if in winter." So spoke the father of medicine over 2000 years ago.

You are all familiar with the Hippocrates Oath, that memorable document containing rules of conduct that should be written in the heart of every physician. Although written over 2000 years ago it still serves us as a way of life.

"The Law" is a short philosophical treatise on medicine as an art. I cannot refrain from quoting two passages. 1. "Medicine is of all arts the most noble; but owing to the ignorance of those who practice it, and of those who inconsiderately form a judgment of them, it is at present far behind all the other arts. Their mistake appears to me to arise principally from this, that in the cities there is no punishment connected with the practice of medicine (and with it alone) except disgrace, and that does not hurt those who are familiar with it. Such persons are like the figures which are introduced in tragedies for as they have the shape and dress and personal appearance of an actor, but are not actors, so also physicians are many in title but few in reality." 2. "Whoever is to acquire a competent knowledge of medicine ought to be pos-

sessed of the following advantages; a natural disposition; instruction; a favorable position for the study; early tuition; love of labor; leisure. First of all a natural talent is required; for when nature opposes, everything else is in vain; but when nature leads the way to what is most excellent, instruction in the art takes place, which the student must try to appropriate to himself by reflection, becoming an early pupil in a place well adapted for instruction. He must also bring to the task a love of labor and perseverance, so that the instruction taking root may bring forth proper and abundant fruits."

His books "On Ulcers," "On Fistulae" and "On Hemorrhoids" concern the diagnosis, etiology, treatment and prognosis of these ailments. The theories given as to the cause of the conditions and the daring and painful methods of treatment used, fill us with reverence and thanksgiving for our own modern and able proctologists.

The book "On the Sacred Disease" shows Hippocrates as a bold warrior, battling against the accepted superstitious conception that epilepsy is a sacred disease instigated and governed by divine providence. He maintains that proof is wanting that epilepsy is more sacred in its origin than any other disease, and in a very logical way shows that epilepsy does not differ from other diseases as far as divine qualities are concerned.

History is vague as to the circumstances surrounding the death of Hippocrates and so we have nothing to offer pertaining to that sad event. His age at death has been given by writers at various figures from 85 years to 109. Whatever age it was we may rest assured that he died after a life filled with complete, interesting and valuable experiences; a life which left its indelible imprint upon a world which sorely needed his life-saving and health-giving contributions. From his character, work, and philosophy I judge he must have died as stoically as did his friend Socrates, but that his hemlock instead of being a poisonous herb was perhaps in the form of one of the relentless diseases that he had spent his life in battling.

Before closing the sketch of this remarkable man it might be well to comment on his worth to civilization. It is generally admitted that to Hippocrates must be credited the work of dissociating medicine from superstition and philosophy. In other words he wrested it from the gods and the philosophers and made of it an independent order, founded on the principle of

honest and careful observation of disease. He was not impressed by fanciful and superstitious theories as to the cause of ailments, or by practitioners with bizarre forms of treatment who were not concerned with an impartial analysis of their true results. Hippocrates was interested in the finding of truth, and believed that the way to find it was by viewing things with an open mind, a tolerant spirit, and a questioning attitude.

To the world he left an order which has since developed into one of the noblest of callings; a profession that has jealously guarded the cause of the sick, and has ever sought to justify its existence by the giving of that which is best.

To the order he founded he left certain principles that have guided it to its present high standards. He taught the art of careful observation and of skepticism, believing that abundant proof should always be had before accepting, wholeheartedly, a given teaching or practice; and therein I see one of the characteristics of the medical man, an unwillingness to accept readily a new teaching or a new cure; an open frankness to disagree with a fellow physician in theories he may have founded or results he may have obtained without sufficient scientific evidence. In matters financial it is relatively easy

to sell a doctor an oil well, but to sell him a cure-all is a different proposition. He has been taught to be skeptical in at least this one particular field. We differ therefore from the banker, business man or financier who relatively seldom are financially fooled, but who in turn are ready purchasers of gold bricks in bottle or pill form for relief of an ailment they know not the diagnosis of. We all err in one way or another due to the fact that our sense of values is trained for different fields.

In closing this review of the Father of Medicine let us ever bear in mind at least two things that Hippocrates left us:

1. The necessity for the art of diligent and thorough observation in the field of medicine with an open mind and a tolerant spirit.

2. The lofty ideals which he left us in the form of "The Oath" which has forever since acted as our moral and ethical guide in the relationship of patient and physician. May the memory of Hippocrates ever strengthen us in the pursuit of that which is right and honorable.

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IMPORTANT FACTORS IN THE STUDY OF CHILDHOOD TUBERCULOSIS*

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In order to discuss this subject profitably it is necessary for us to readjust some of our previous conceptions of childhood tuberculosis, and augment our somewhat vague knowledge of the disease, by reviewing the recent advancement in this field of health endeavor.

Whether our interest is seen through the eyes of the public health worker, the visiting nurse, the Board of Health official, the clinician, sanatorium staff, or the public at large, it would profit us if we would carefully review the splendid progress which has recently been made in the study of this disease in childhood.

This progress and added knowledge are due

to the work of able and indefatigable enthusiasts in medicine and health work, who, by their untiring efforts and diligence, have presented us with new weapons to fight the disease, new ideas of coöperation and more practical aids in diagnosis and treatment. The workers of your state, city, university, sanatoria, and hospitals have helped materially in adding to these more recent accomplishments, and it is to you, to no small degree, that we look for further development and guidance.

Two of the most important factors in dealing with childhood tuberculosis are cases of contact and the knowledge gained by the use of tuberculin. We will limit most of our discussing to-night to these two subjects.

*Presented at the Sixth Annual Lymanhurst Banquet, April 23, 1930.

Perhaps the most important factor we have to deal with in our efforts in childhood tuberculosis is the problem of discovering children who have been exposed to the tubercle bacilli. In other words, contact cases. This phase of the subject should be our first consideration in diagnosis, in treatment, and in prophylaxis. What a problem the search for contact cases is. The visiting nurse is really the advance guard, and to her we gladly grant honors. She is the reconnoitering scout, and by her tact, diplomacy and kindness much information can be obtained, as such qualifications go far in securing that information from parents and older children. The visiting nurse inspects the home environment, and, thereby, has an opportunity to observe the state of sanitation, the sleeping quarters, the amount of rest the children obtain, the balance of food, the pasteurization of milk, and, more important, she is in a position to discover the presence in the home of a grandfather with bronchitis, an aunt suffering from asthma, a brother with catarrh, or a mother with intercostal neuralgia, any of whom may be a masked case of open pulmonary tuberculosis. The teacher and the school nurse are in a position to observe the children during hours of relaxation and play. Undernourished, poorly developed children, and mental peculiarities can be noted and the home in turn visited, so by the combined efforts of the nurse, the social worker, and the teacher, such children may be persuaded to attend the clinic where newer and more comprehensive methods of diagnosis enable us to discover cases of infection.

In the study of the home environment of children, let us not forget the family's neighbors where children visit or the frequent calls of invalid friends. Such sources of infection are not uncommon.

THE USE OF TUBERCULIN

What a remarkable help the use of tuberculin has been in the examination of children! What can we learn from a careful study of the use of this adjunct? We can safely state that a child reacting to tuberculin has one of three conditions, namely: (1) A persistent exposure to the tubercle bacilli. (2) The infection has developed an establishment within the human organism and is lying dormant or latent. (3) The child is suffering from the disease, tuberculosis.

In the first instance, the specific defense forces (immunity) are successfully combating

the effects of the infection, the tubercle bacilli are being destroyed in the body before they can establish a base. Think what this means. A persistent strife between the defense mechanism of the body and the invasion of the germ, a constant menace to the child, for at any time a tuberculous lesion may be brought into being. Is it any wonder that our medical authorities lay such stress on the importance of, first, finding the source of the infection, and, second, the protection of the child from the same? Our lesson from this is, that persistent opportunity for repeated infection leads to invasion, latent disease, or active lesions. The fact is appreciated that the diagnosis of tuberculosis in the child is wrought with greater difficulties than in the adult. The child cannot describe complaints and feelings. The symptoms in childhood are often the same as in other juvenile affections such as digestive disturbances, influenza, and repeated bad colds. The child may appear healthy and the weight may be normal.

In the minds of the public much confusion may exist over the terms, "active" and "inactive" disease. An active case of tuberculosis is in reality one in which the toxins or poisons caused by the action of the germ are being absorbed into the blood stream. Unfortunately we have no instrument of precision, no chemical formula, or no blood reaction which will detect the amount of absorption which is required to cause signs and symptoms of the disease. One can readily see that there is a reasonable interval or vague interlude between the beginning of a small amount of absorption and the amount large enough to disturb the child's well-being. It is in this interval that we find such difficulty in deciding whether a case is active or inactive, and this fact accounts for some of the differences of opinion in diagnosis.

Tuberculous infection in childhood life has a preference for skin, mucous membrane, glands or bone, probably due to the fact that this type of tissue is less mature or less resisting. This, therefore, makes the child more susceptible to the infection of tuberculosis. For example, infected milk absorbed through the mucous membrane of the intestinal tract finds its way to the glands, from which the infection travels to the bone by way of the circulation, or indirectly to the lung, or directly to the pulmonary tissue by the respiratory tract and from there to the bronchial glands.

The old rule that the younger the child infected the greater the danger of a fatal outcome

must still be remembered, but when we review the recent work of investigators, including our friends at Lymanhurst and others, we are happy to find their conclusion encouraging. Take, for example, the investigation of Drs. Myers and Kernkamp, who recently reported the examination of 532 infants of whom 236 reacted to tuberculin and over 195 gave definite history of exposure. Few of these children succumbed to tuberculosis. Of 172 traced only six have died. This remarkable report shows that even a strong tuberculin reaction in infants is not necessarily the sign of a fatal issue. A negative reaction following strong solutions of tuberculin is also of help, especially in the presence of fever, and the following rule has few exceptions: No reaction to a tuberculin test in a child having definite fever, provided the child is not desperately ill or moribund, is reasonable evidence that the fever is not due to tuberculosis but no barometer for the future.

So much for the questions of contact and tuberculin. The following items are also factors in the study of childhood tuberculosis:

(1) The public health nurse and social worker, the teacher, the student, the physician, and the public should join in the work of education, so that all will have a better understanding of tuberculosis as it occurs in children. Particular importance should be stressed on ways of infection, methods of protection, the use of tuberculin, the value of the open air schools, of preventoria, and sanatoria, and the importance of treating children exposed to repeated or massive infection.

The above education should be disseminated by the use of tact and skill, the fear thought should be kept in the background, the recitation of dire results following disobedience are better left unsung. Kindliness, thoughtfulness, and convincing explanations of the issues go further in educating the average American father, mother, sister or brother.

(2) The tuberculin reaction recognizes infection and often gives a broad hint as to its severity. When a reaction is found, always search the habitation of the child for a possible "open case."

(3) If we are to obtain the greatest amount of information and do the most good, all children known to have been exposed to infection should be given a tuberculin test. All children who appear undernourished or anemic, or give evidence of fatigue or languor or loss of appetite or lack of the play urge should also be tested.

(4) Cases reacting to tuberculin should have an examination including a roentgenological study.

(5) Latent and manifest tuberculosis in children are more prevalent where an open case has existed in the family.

(6) Active disease may exist in the child who is above normal weight, is the picture of health and who is symptomless.

(7) Prophylaxis, or the prevention of disease is augmented by tuberculin test, repeated physical examinations, and x-ray studies.

(8) The x-ray study is in reality internal inspection, and is therefore part of a complete physical examination.

(9) Calcification in the glands or pulmonary tissue is an excellent sign that the child has at one time overcome at least part of the infection, but such evidence is not the sign of security we once thought it to be. Fresh infection can and frequently does become superimposed, or the old infection may become reactivated. Calcification is not always a sign that the disease has existed in the remote past. Calcareous degeneration may occur in a much shorter interval than was previously thought.

(10) Serial examinations of all reacting children should be the rule in order to anticipate developing lesions.

(11) In the childhood type of tuberculosis do not expect to find dramatic symptoms such as hemoptysis, loss of weight, emaciation, severe cough, and extreme pallor. In this type of disease the child may have succumbed before such signs could appear. Excessive energy output followed by fatigue, restless sleep, digestive attacks, repeated bad colds, and capricious appetite are more suggestive of the picture caused by the absorption of poisons produced by the action of the tubercle bacilli.

(12) In infants and young children the negative result of a physical examination should be noted with reservation; some of the time honored classical signs found on physical examination have been shown to be of somewhat limited value.

(13) Periodical health examination of the child is just as necessary, essential and important, if not more so, than of the adult, if we wish to decrease the fatality in childhood tuberculosis.

(14) The oft repeated remark "everyone has some tuberculosis" is not proven and such statements misinform the public and act as a detriment to public health work. Childhood tuberculosis is a serious problem.

A PUBLIC HEALTH PROGRAM FOR A COUNTY WITH A POPULATION OF TEN THOUSAND OR LESS*

BY ROBERT W. ALLEN, M.D.

FORMAN, NORTH DAKOTA

Those of you who attended the Health Officers Convention at Bismarck last year will perhaps recall that at that time we read a paper before that august assemblage entitled "A practical Public Health Program," which was in reality a résumé of public health activities in Sargent County from the time when the memory of man runneth not to the contrary up to now. According to the program of this present meeting here we are now supposed to expound the subject of "A Practical Public Health Program for a County of Ten Thousand Population or Less." One would accordingly assume that we had merely carried over from last year's program, but you may rest assured that such is not the case, for what one has done or is doing in public health work and what he sees fit to do, constitute two distinct programs altogether. In a rural county like ours where obstetrical pain is as laudable and free as was pus in the pre-Lister days, one cannot always do as he would choose.

It will be our direct aim in the discourse of this paper not to infringe on the proposed full time public health program which is being so ably and sincerely promoted by our State Health Officer and his co-workers, for the reason that we feel that long after legislation has been enacted authorizing full time public health units, many countries and even cities will continue such a program as is now authorized by our statutes. The reason for this is obvious. We already have a law in this state authorizing county nurses, yet how many counties have them not. Even in our county her services were dispensed with some years ago. Not a very recommendable move I can assure you. Although I am firmly convinced that such a program as would be carried out with or by a full time health unit would be ideal, yet I feel just as certain that perhaps even years will elapse before such a program will be state wide even after legislation has been enacted authorizing it. Therefore in the meantime it behooves us to make the best of what we now have at our

disposal or what we can promote out of it.

Individually no man is respected more highly than the physician. Collectively, doctors are often looked on as a nuisance, because in season and out of season, they try to advance public measures to reduce sickness and obviously to reduce the number of their patients. Such unusual acts of philanthropy are very apt to be viewed with suspicion by the general public and particularly by legislators who fail to understand why a man should destroy his means of earning a livelihood. Moreover, the public does not wish to be disturbed or to be forced in the midst of health to dwell on the unpleasantness of sickness. Thus it is that the medical man in his efforts to secure health measures for the prevention of disease is not only treated with indifference, but often also vigorously opposed by the public and by the legislators. The public may always be generously enlisted to remedy existing evil, to prevent some future evil is less appealing.

It has been our experience in public health work in Sargent County that the more we do the more we are criticized by the tax payers at large. The reason for this perhaps is obvious and to a certain extent justified by them. Unfortunately we cannot erect a public building, construct a bridge or a highway while performing public health work and therefore have nothing material to show for our efforts. The entire expenditure of the average County Board of Health for a fiscal year will cost a commonwealth no more than a meagre road bridge or a mile or two of improved highway; still the reaction of the tax payers to them is utterly different. Before condemning anyone we should check up on matters from their standpoint, and if we stop to do so in connection with the criticism of tax payers toward public health work, we must admit that we are not giving them value received for their dollar expended, to the fullest measure possible. This is one of the strong talking points in favor of a full time public health program, and I think it is also applicable to the program which we are about to outline. Of course the average tax payer who criticizes the expenditures of the Board of

*Read at the North Dakota Health Officers Conference, held at Grand Forks, North Dakota, May 6 and 7, 1930.

Health is uninformed as to the work actually to be performed, the conditions under which it must be done, and the personnel of those who are obliged to do it. Their knowledge of public health work consists chiefly of their digesting the amounts paid out by the County Commissioners for a certain period of time for such service. However, the tax payers are entitled to the best service we can render them and the most their dollar will buy. There is no question but that the time honored public health program of merely instituting and releasing quarantines is insufficient.

The personnel of a public health unit for the carrying out of such a program as we wish to suggest would consist of the President, the Vice-president and the Superintendent, who would be part time, and appointive as under the present regulations. In addition to this personnel we should have at our disposal an efficient and especially trained public health nurse. It is just as necessary for a physician who is health officer to have a nurse assistant in order to properly carry on the work as it is to have a special nurse attending a seriously ill patient. It is true that we can get along without them in a fashion, yet, if we desire to render real worthwhile service in either instance, the services of a nurse are vital. Without the assistance of a nurse the Health Officer is required to attend to every duty of the office; many of the duties are trivial and could be better cared for by a nurse, at less expense to the commonwealth, than by the Health Officer himself. With such a combination the duties of the Health Officer would become more executive while the majority of the field work would be cared for by the nurse. I would not however relegate to the nurse the authority to pass on the question of establishing or releasing the quarantines, except in particular instances. In addition to this personnel some arrangement should be made for the service of a sanitary engineer for such a period of time annually as necessary. After such a health board is established it could outline a more or less definite public health program.

To begin with, a regular quarterly meeting program should be adhered to, at which time a full quorum should be present. At such a meeting the proposed activities for the ensuing quarter should be definitely discussed and the support of the members of the Board thereto be secured. Special meetings should then be held as occasion arises. One of the first ideas to be put forth after the Health Board is established

should be a health education campaign to promote inoculation and vaccination against preventable disease. Each Parent-Teachers Association and other interested societies in the county should be communicated with and the opportunity of the nurse or health officer to address an early meeting of the Association should be improved, with the idea of stressing the importance of preventing disease. Other organizations throughout the county should be interested. This could be ably fortified by showing some of the various moving picture films appropriate thereto. Special stress should be made to properly place this idea before the Board of County Commissioners. We would consider the promotion of vaccination against smallpox as one of the first measures. The necessity of this should be stressed before each child has arrived at the age of one year. We speak of smallpox primarily because it is one of the oldest preventable diseases. Each and every child attending school should be protected against smallpox by successful vaccination.

Diphtheria would perhaps be secondly considered because of its grave seriousness when epidemic, and because of the absolutely certain preventive inoculation against it. We would advise inoculation against diphtheria by toxin antitoxin after the age of six months.

Scarlet fever would be the next preventable disease to be considered. Every child attending public school should be inoculated against scarlet fever, and all contacts to the active disease itself regardless of age. May we digress here to consider the means of inoculating against scarlet fever. There is probably no question theoretically but that the best means of inoculation against scarlet fever is carried out by the six dose inoculation. However, from the practical standpoint in a rural community we find it almost impossible to execute more than the two dose inoculation. One dose of the standardized vaccine would probably be sufficient, but we should advise and administer two doses when possible to do so, and recommend the third. We have found it possible in our work in Sargent County, where we have inoculated no less than 500 children against scarlet fever, to administer two or three doses of vaccine. We have gloriously failed to impress on the people the necessity of six doses.

Typhoid and paratyphoid should be inoculated against in every instance where the disease is encountered, all contacts being inoculated. These diseases are probably not sufficiently prevalent,

at least not so in our country, to carry out a 100 per cent program prevention. From time to time as different preventable diseases are encountered every effort should be made to carry out a neighborhood or community or school inoculation of others who have not previously had the disease or been inoculated against it. In many instances this would require the expenditure of considerable funds. A working arrangement should be made or would have already been effected with the Commissioners to support the added expense for vaccine or other preventatives. This can be also arranged with the Local Township Board of Health or with the School Board as we have done in several instances. It has been our experience that few refuse inoculation for themselves or children if the expense thereof is supported by the commonwealth. Regardless of their personal ability to pay or not to pay they feel as though it is a service which they deserve. The local physician may feel as though his work is being infringed upon yet if the Health Officer does not see to it that the vaccinating or inoculating is done, the majority of it will not be attended to. The local physician should always be associated with in connection with a community or school inoculation in his jurisdiction.

At the beginning of each school year a physical inspection of the school children should be carried out by the nurse, under the direction of the Health Officer. Notices should be sent to all parents and guardians of children found defective and in need of dental or medical care, suggesting that they consult their family physician or dentist for relief of same. Toward the end of the school year the nurse should make another survey of the school children, this time merely checking upon the defectives listed at the beginning of the school year or at the previous examination, and upon others whom the teacher particularly called her attention to, and determine whether or not they are still in need of medical attention; if so, she should arrange for such service if possible; if not, a clinic could be arranged for some later date in the season. At this second visit or survey the nurse would select prospective candidates for Camp Grassick for summer encampment.

The poor and sick we have with us always, and unfortunately they too often go hand in hand. A family distressed with both poverty and illness is in a sad predicament indeed, and at no other time could a board of health render a more noteworthy service. If the services of

a nurse could be available to go into such a home on short notice and merely arrange the sick room and teach some member of the family the proper care of the patient, it would be worth a good deal. There is always some one available to help under such circumstances, if they only knew what to do. It would be an appreciated task for the Public Health Nurse to go into such a home, if but for a few hours, and teach the most necessary means of relief.

A systematic campaign against tuberculosis and the condition of all undernourished children of ten pounds or more underweight should be carried out. The homes of these poor victims should be visited and if possible an arrangement made to send them to a sanatorium or a rest camp. The rudimentary home care for them should be taught.

A campaign against venereal diseases is necessary as conditions arise. Fortunately in the rural sections we do not come into contact with a great many venereal cases and therefore our work along that line is not of great extent.

All tourist camps in the county should be inspected monthly during the tourist season, and drinking water supply analyzed at the time of each inspection unless this supply is obtained from an artesian well. The water from an artesian well which is shown to be safe for drinking purposes by analysis at the beginning of the season, will in all probability remain so. All other sources of drinking water should be carefully inspected and attended to from month to month. The source of drinking water for all other public purposes whatsoever should be subjected to the same inspection. All public playgrounds or summer vacation camps should be given the same inspection as a public tourist camp.

Generally speaking, the promotion of public health propaganda should be carried on not only through addresses before Parents and Teachers Associations and other kindred associations but by publication of suitable articles in local papers from time to time.

The expense of such a program as we have endeavored to outline should receive some definite consideration. In connection with this we must prevail upon the time-honored custom for the physician who is the Health Officer to render a great deal of service gratuitously. The average county with a population of ten thousand or less which is supporting a worthwhile public health program at the present time is expending from two to three thousand dollars annually for pub-

lic health work, and under the present system it consists to a great extent of merely instituting and releasing quarantines and fumigating homes on the per diem and mileage basis.

As stated before, the majority of the field work would be carried on by the nurse. The annual expense of the nurse including her salary, livery and mileage, office and other incidental expenses would be approximately \$2,500.00 per year. The Health Officer would receive the minimum salary as now specified by law of \$300.00 per annum. This is usually adhered to by the average Board of Commissioners; it represents his clerical office work. His additional income, per diem and mileage would probably not exceed \$700.00 per annum. Add to this the various miscellaneous items such as vaccine, fumigation, postage, express, and other incidentals which would probably aggregate a total of an additional \$500.00. Roughly estimating, the total of such a public health program would be in the neighborhood of \$4,000.00 per annum. This amount would double the amount that is

now being expended by a few of our County Boards of Health, 25 per cent more than a majority of them, a little if any more than a few of them are now expending.

In order to offset this increased expenditure, great or small as it may be, we have the additional full time service of a public health nurse, which together with the coöperation of a health officer would more than double or perhaps triple the public health work that is now being done, I dare say, by any board of health serving a population of ten thousand or less, or even more in any county in this state at the present time.

I do not consider that such a program as we have tried to outline is equal or could be equal to a strictly full time public health program such as our State Health Officer is now sponsoring. Yet I do firmly believe that it would materially improve the service we are now rendering to the people, give them more real service for their money expended, and create an impression upon them that we are really attempting and rendering a worthwhile service. I thank you.

X-RAY NEGATIVE TEETH

BY ELMER S. BEST, D.D.S., F.I.C.D.

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The question of the disposition of so-called "dead teeth" (which term is grossly incorrect) never seems to be entirely at rest. Each time it is taken up for discussion, however, we seem to get a little nearer a solution acceptable to all concerned, the patient, physician and dentist.

One viewpoint in connection with the problem, which is badly in need of clearing up, however, is the disposition of that group known as "X-ray negative teeth." By this is meant that a radiograph showing a pulpless tooth with root, peridental membrane, peridental lamella (socket) and adjacent apical bone structure intact is not by any means infallible. These teeth have been a point of contention for many years and but little progress has been made in finding a satisfactory solution to the question, "Should they be retained or removed?" For years dentists have regularly checked such teeth with the radiograph and if bone absorption at the apex was not evident the teeth were held innocuous and their retention advised.

One can not dismiss with a wave of the hand the rights of the patient from the standpoint of a satisfactory restoration of function or appearance in the event of these teeth being lost.

Neither can we hold lightly our responsibility for leaving such teeth in the mouth of a patient while the question is being settled by investigators as to whether bacterial activity at root apices is always indicated by destruction of osseous tissue, shown radiographically. While we await the final answer to the question, the patient's general health may be seriously undermined or irreparable damage may be done to a certain organ or part. In trying to solve the problem, it would seem that great progress has been made that offers many advantages to patient, dentist and physician.

In the first place, the dentist must thoroughly believe and practice that "Diagnosis is the basis of treatment." Following this belief, he must make a complete examination of his patient's mouth before any work is undertaken. Part of

this examination is an x-ray examination of every portion of the alveolar structure that now or in the past may have held the roots of teeth.

In such an examination he will many times find teeth quite obviously diseased. This is shown by destruction of bone tissue at the root ends or along the sides of roots. There is only one procedure in such conditions. They are with a few exceptions eliminated surgically.

But what about the teeth known as x-ray negative. Some of our most serious conditions result from such causes and yet on the other hand there is always the possibility that the tissues at the root ends of such teeth may be healthy and that vital pulp tissue may have been retained in the root tip. To make a definite diagnosis as to the effect such teeth have on the health of the individual simply from reading a radiograph is with our present knowledge too uncertain.

It, therefore, becomes a most serious problem to decide some of these questions. To remove one or more such teeth which were in no way a factor so far as infection was concerned, and subject a perfectly healthy patient to a very considerable expense for replacement requires a very flexible conscience to find justification.

When such teeth are found the dentist should refer the patient to his physician for a physical examination, submitting to him a complete report of the dental findings. The physician makes his examination and in consultation with the dentist determines whether or not there is a probability that these teeth may be a factor in any impairment in health from which the patient may be suffering. If it is decided that there is such a possibility, the dentist must proceed to extract such teeth.

This eliminates much of the controversy and guess work so prevalent at the present time. All too frequently have dentists gone ahead with

the complete dismantling of a human mouth in an effort to effect a cure of some condition not in any way even remotely related to infection.

In the same way physicians, because they anticipated a lack of co-operation on the part of the patient's dentist, have proceeded on their own accord to have an x-ray examination of the teeth made and then made their own diagnosis of the teeth.

By the co-operative plan outlined here the mistakes invited by both the procedures referred to are greatly reduced and the patients benefit greatly.

If the physician reports the patient to be in a good condition of health there is no good for removing these x-ray negative teeth and the patient is spared this sacrifice and expense.

Patients go to their dentist ordinarily in good health and to their physician when they are sick. Here we have a wonderful opportunity to help in maintaining a condition of good health in the majority of our patients. The dentist stresses the importance of yearly examination by the patient's physician and on his history chart he records the date of the patient's birthday.

On this date of each year he draws the patients' attention to the matter and sees that they go to their physician for their examination. While it is not assumed that such physical examination will indefinitely prolong life, yet it is well known that many conditions, sometimes slow in developing and which later terminate fatally, can be detected by such an examination and many times corrected.

Here we have physician, dentist and patient working hand in hand for the longevity of life in maximum health. To continue to assume that x-ray negative teeth are innocuous when the only evidence is the Roentgenogram, is taking too great a chance with the patient's health.

CLINICAL PATHOLOGICAL CONFERENCE

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The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—981.

White man, 43 years of age, admitted to hospital June 18, 1930. He was well until June 1 when he had a severe cold and was confined to bed for one week. At this time he had some fever and a slightly productive cough. He was then up and about for a week. On June 18 he consulted a physician, complaining of headache and stiffness of the neck. On admission he was delirious. Examination showed rigidity of the neck; positive Babinski on the left side; right biceps reflex was increased and there was moderate spasticity of the right arm. The eyegrounds were negative. Nose and throat negative. X-ray of the chest was negative on admission.

Spinal fluid was bloody and the pressure was normal. June 20 the spinal fluid was orange color and there was slight increase of pressure. Several punctures after this date showed bloody spinal fluid under normal pressure.

Blood on admission showed 4,000,000 red cells; hemoglobin, 68 per cent; 14,000 white cells; polymorphonuclears, 87 per cent; June 30, white cells, 16,700; July 3, 20,500; polymorphonuclears, 94 per cent. Bleeding time, one minute ten seconds; coagulation time four minutes five seconds. The temperature was normal at first but later rose as high as 103.6°. During the last two days there was definite evidence of bronchopneumonia. Death July 4. Bronchopneumonia was recognized, but no diagnosis was made as to the cause of the bloody spinal fluid. There was no history of injury.

Post-mortem report. Massive bronchopneumonia of hypostatic type. All other thoracic and abdominal organs negative. An aneurism of the left vertebral artery on the lateral side of the medulla is found, which extends down into the foramen magnum and produces a depression in the left side of the medulla. The aneurismal sac is about one cm. in diameter. There is leakage of blood into the subarachnoid space but no gross rupture of the aneurism.

Diagnosis. Aneurism of the left vertebral artery with pressure on the medulla, and terminal bronchopneumonia.

Comment. This is a very unusual case and a clinical diagnosis was hardly possible. The symptoms were evidently produced by pressure of the aneurism on the medulla.

Autopsy—30—1021.

Man, 58. In 1921 he had a somewhat acute duodenal ulcer with some infection of tonsils and a few infected teeth. The tonsils were removed and the teeth extracted. The ulcer healed medically. On numerous subsequent examinations by x-ray, it was shown to be healed, without any gastric symptoms.

In December, 1922, after exercising, he had an ache in the back of his head. This had appeared daily, or every few days. His eyes were examined, glasses were prescribed, and he thought he was better. The eyegrounds were entirely negative. X-rays of the sinuses were made. On transillumination, the sinuses were negative. His urine was normal. Hemoglobin was 88 per cent; red blood cells 5,880,000; white cells 10,000; normal smear. His weight was 164½ lbs. X-rays of his head and neck were negative. His blood pressure was 162/90. The rest of the physical examination was entirely negative. Urea nitrogen was 20 mg.; creatinin 2.2 mg.; uric acid 2.3 mg. P. S. P. was 89 per cent in two hours. Wassermann was negative.

In July, 1926, gastrointestinal x-ray was normal.

In March, 1928, his blood pressure was 189/100. Blood sugar was .115 per cent; creatinin 2.04 mg.; urea 16.1 mg. Hemoglobin 87 per cent; red blood cells 5,060,000; white cells 11,800. At this time the prostate gland seemed slightly enlarged. Heart rate was 84; A2 was ringing and accentuated. His urine contained a faint trace of albumin and a few hyaline cast. A six foot plate of his heart showed slight left ventricular enlargement with a widening of the base. There was no evidence of calcification of the vessels of the feet. P. S. P. was 74 per cent for two hours. The eyegrounds were negative. Urine in June, 1928, was negative.

In May, 1929, his blood pressure was 210/120. There was a definite trace of albumin and a few hyaline and granular casts. Urea nitrogen was 19.7 mg.; creatinin 2.48 mg. Almost daily the urine showed albumin and a few hyaline and granular casts. X-ray of his heart in November showed slight enlargement of hypertension type and definite widening of the aorta. Gastrointestinal x-ray was negative. Heart rate at this time was about 85.

In March, 1930, the first red cells were discovered in his urine. Urea nitrogen was 19.6 mg. Electrocardiogram showed left ventricular enlargement.

He had an acute nose and throat infection just before the red cells were discovered in the urine. Heart rate 90; he had a little suffocated feeling in his chest with a gallop rhythm. He was placed on digitalis.

In the latter part of April there were hyaline casts and granular casts in the urine but no red cells. In May his creatinin was 2.37 mg.; urea nitrogen 26.4 mg. The last of May the red cells reappeared and urea nitrogen was 26.5 mg. The red cells gradually increased so that on June 2 there were quantities of red cells and large numbers of hyaline and granular casts. On May 27 urea nitrogen was 42 mg. On July 3 it was 54.2 mg.; creatinin 4.88 mg.; hemoglobin 48 per cent.

From the early part of June he went down hill very rapidly. Eyegrounds negative the early part of June. On July 5 there was very marked albuminuric retinitis; a recent hemorrhage and exudate. Blood pressure 245 to 165 systolic; 120 to 150 diastolic. His urine was almost the color of port wine.

Twitchings appeared over his body a week before his death; also Cheyne-Stokes respiration; gallop rhythm. He became unconscious on July 8 and died on the ninth, with a terminal bronchopneumonia and a temperature of 107°. The specific gravity of his urine remained between 1.014 and 1.018, uncentrifuged. After centrifuging, the specific gravity was 1.010.

Post-mortem report. No edema, ascites, or hydrothorax. Heart weighs 650 grams; left ventricular hypertrophy; no enlargement of the right heart. No edema of the lungs. No passive congestion of the spleen or liver. Right kidney 100 grams, left 110 grams; finely granular surfaces; thinned cortices. Microscopic examination shows extreme atrophy of the cortex, brought about largely by sclerosis of the small arteries and to some extent of the small arterioles.

Diagnosis. Primary hypertension with slowly developing uremia.

Comment. This is an example of primary hypertension which caused cardiac hypertrophy but did not cause heart failure. Death was due to uremia. The uremia developed slowly as a result of sclerosis of the small arteries of the kidney.

Autopsy—30—1004.

A white man, 73 years of age, fell down a shaft June 23, 1930, sustaining a comminuted fracture of the left femur, the fracture extending into the knee joint. Buck's extension and Thomas splint were applied. On July 2 the splint slipped and manipulation of the fracture was necessary. On July 3 Steinman pin was inserted into the head of the left tibia under nitrous oxid anesthesia. July 4, 10:30 a. m., he vomited a mouthful of decomposed blood. He vomited five or six times in all. At noon he was given 400 c.c. of intravenous calin. At 1:00 p. m., had a chill; temperature rose to 103°; pulse 140. He was cyanotic and stuporous; reflexes were normal; there was no pain. The abdomen was distended; distention relieved by Noble's enema and stupes. July 5, the temperature came down to normal. July 6, no apparent change. 4:00 a. m., July 7,

he had a chill and weak, thready pulse, rate 140. He was weak. Axillary temperature was 105.8°. He died about 5:30 a. m.

Post-mortem report. Comminuted fracture of the left femur. Marked edema and congestion of the lungs. Thrombosis of the left femoral vein. Pulmonary embolism.

Diagnosis. Pulmonary embolism following comminuted fracture of the left femur. Edema, congestion, and hemorrhage of the lungs.

Comment. Pulmonary embolism following injury is by no means a rare condition. We have on record in this laboratory more than 30 instances in which embolism occurred following fracture or bruising of the soft parts.

Autopsy—30—916.

Unmarried woman, 23 years old, admitted to hospital June 6, 1930, complaining of chills, vomiting, pain in the lower abdomen, and a bloody vaginal discharge. She gave a history which strongly suggested instrumental abortion four days previously. She admitted seven previous instrumental abortions.

On admission there was marked abdominal distension with tympanites; generalized tenderness and rigidity. Rectal examination disclosed a somewhat enlarged uterus with generalized tenderness and no masses. The heart and lungs were negative. The temperature was 103°; pulse, 102; respiration, 20. The urine showed a trace of albumin and a trace of sugar. Leucocytes 29,700 with 91 per cent polymorphonuclears. Blood pressure 100/68. With rest in bed the patient began to show improvement until June 14, when her temperature was practically normal and respirations 26. Her pulse, however, was 136, her lips were cyanosed, and her skin was very pale. On June 15 distension and fever reappeared. Temperature was about 101°. June 16 a definite fluid wave could be felt in the abdomen and there was dullness in the flanks. Leucocytes 20,000. On the 18th a right rectus incision was made into the abdomen and about four liters of thin cloudy fluid drained out. Smears of the pus showed streptococci in short chains. An incision was also made into the cul de sac. Death June 18.

Post-mortem report. No edema; no jaundice. Numerous hypodermic marks on the arms. Recent surgical incision. The peritoneal surfaces are covered with a thick, fibrinous exudate; numerous soft adhesions; numerous collections of thick, greenish pus. Marked cloudy swelling of the liver and kidneys. No gross evidence of endometritis; uterus slightly enlarged; bilateral purulent salpingitis.

Microscopic sections of the uterus show no placenta or decidua but decidual giant cells are found in the uterine wall.

Diagnosis. Streptococcal peritonitis following an induced abortion.

Comment. After an induced abortion the uterus frequently shows no gross evidence of endometritis. Nevertheless, the infection has spread from the uterus to the peritoneum. The giant decidual cells in the uterine muscle are sufficient evidence of a recent pregnancy. It is noteworthy that the patient had survived a number of induced abortions previously.

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 The Soo Railway Surgical Association
 and The Sioux Valley Medical Association

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MINNEAPOLIS, SEPTEMBER 1, 1930

THE INTER-STATE POSTGRADUATE
 MEDICAL ASSOCIATION OF
 NORTH AMERICA

This is a tremendous title, but it belongs to a very large organization and so it is very fitting.

The old Tri-State Medical Society that we men used to attend and enjoy so much has merged into a much larger organization and has been further enlarged in scope by its foreign tours, giving the members an opportunity to attend clinics in foreign countries. It has therefore made a tremendous name for itself and has withstood a great deal of criticism as well.

Dr. William B. Peck, of Freeport, Illinois, is the managing director; and if anyone saw him in action he would understand what he would do for medical men in medical action. The editor does not believe the organization could go on without him successfully. As it is, their volumes of transactions have now been increased, as they issue one each year, and they maintain a high rate of sale. And this has been put over so far and probably will be as long as Dr. Peck is in charge.

Dr. C. B. Wright is to have the pleasure of being the chairman of the speakers reception committee in Minneapolis at the October meeting of the association, and we certainly expect

something to be done at that time. Dr. N. O. Pearce is to be the general chairman of the reception committee. He, too, is an active man, and gets over the ground with considerable speed, medically speaking. So the men of the Northwest and of the central states should make their arrangements to attend the October session of the Inter-State Postgraduate Medical Association of North America. And it is always wise, when a big meeting is to be held in a city, to make one's reservations for hotel accommodations as early as possible.

"THE BUSINESS OF MEDICINE"

The editor is in receipt of a reprint from Santa Barbara, California, by Rexwald Brown, M.D., entitled as above. He is very much interested and he thinks he can abstract enough from the article to make it readable for our subscribers.

Dr. Brown starts off with: "Long before the era of Christianity the medical profession hitched its destinies to a code of procedure which has retarded its thought. The Hippocratic code, a superb guide for moral conduct between physician and patient, has created an attitude of mind generally accepted by the profession and by the public through a period of many centuries.

"This unquestioned attitude is that the relationship between a doctor and a sick person is distinctly individual and has only a remote or indirect bearing on society. In this spirit medicine has pursued its course under a mantle of tradition. Beneath the mantle there has grown a structure of insularism, detachment from movements in other spheres of human endeavor, reticences, customs, regulations and misinterpretations of the code.

"Civilization is not static. New combinations and new relationships push hard on the heels of the old. Mental alignments held unbreakable are pushed asunder by a public demanding answers to fair questions. Organized medicine is being challenged to justify its economic position in the body politic. And who is there too answer the question?"

Dr. Brown further questions "Does medicine believe that its system of individualistic economics is other than chaotic confusion? Are today's medical economics satisfactory to medicine and to society? If so, why are there so many heated, perplexing, endless and inconclusive discussions within and without the profession and arguments pro and con about physicians'

and surgeons' fees, hospital costs, nursing expenses, charity care, contract practice, social insurance, dispensary development and abuse, et cetera?

"The facts are that unless medicine revises its educational structure and teaches those subjects which will enable medicine to make adjustment with the whole modern economic scheme the profession will, as a class, be subject to lay domination. The position of many medical men in big industry is already that of subordination."

This last paragraph has a good nut to crack and it is a subject that has probably been discussed more than anything else in so-called medical ethics. But we are inclined to think that medical ethics as it was formerly understood has disappeared in a slough of despond. We try our best to keep on the right side of a normal situation, treating our fellow men right, but do we succeed? No, we do not, and we probably will not succeed for many, many years; and by that time medical practice may be obliterated!

Medical men will have to learn that unless medicine revises its educational structure, and teaches those subjects which will enable medicine to make adjustments with the whole modern economic scheme, the profession, as a class, will be subject to lay domination. They may be dominated by the various cults that have sprung up in the country at large. And the real old-fashioned medical practitioner that we have tried so hard to reorganize and rehabilitate will not appear again. For instance, the position of many medical men in big industry is already that of subordination.

One of the outgrowths of the Hippocratic idea is medical altruism. Mankind credits the medical man as it credits the clergy with higher spiritual attributes, Dr. Brown believes. There is some question about that, and it has led to a great deal of discussion and a great deal of disfavor. Then, too, the conviction has gradually dawned on physicians that they "have no adequate concepts of business matters and that it is not wise to entrust them with control and expenditure of money in the advancement of projects intimately concerned with the welfare of society and of medicine." Consequently, the medical profession does not exist as a cohesive organization. They talk about it, but it actually doesn't amount to much. And gradually the cults are creeping into the so-called medical profession and upsetting a good deal of the work

already performed and carried out by physicians.

What we need, really, is a new chair in the University of Medicine, a chair of economic organization that will lead the young men to think of the business side of his profession as well as the professional side. So the man who is a good business instructor should be awarded his place in the medical college. In some universities (but very few of them, and not in the state of Minnesota) there is a course in business for the doctor. He ought to have it, and have it while he is young, because then he would know what to do with what money he takes in. He won't be throwing it away on useless purchases as most men do. All this can be met in society by class method of regulating fees, insisting upon medical and economic conditions. Consequently, this means an organization which will do its work properly under the guidance of a state university which has a medical school in connection with it.

Dr. Brown speaks of the work of Dr. Ray Lyman Wilbur as a man who thinks very broadly, and refers to the committee under him who are working "on the cost of medical care," which is reduced to a science; but Dr. Brown feels that it will take him five years at least to inaugurate the system. But it will do more to improve the medical world than anything else, for Dr. Wilbur is a man of broad ideas and is accustomed to surveys and analyses in an evolving civilization. And any man who stops to think will follow that rather than allow all sorts of things to happen to his medical society by the admission of improper persons. This medical economic bureau should be composed of non-practicing physicians, but the editor supposes this would include some of the older men who have laid by a store for themselves so they need not be troubled—but they would be very difficult to find. But there are physicians who have business minds and business methods, and if they will keep it up as business advisers they will do the medical profession a large amount of good.

THE MODERN OATH OF HIPPOCRATES

Posted on the Bulletin Board of a Chicago Hospital and forwarded by M. J.

I swear by the gods and goddesses of Moolah, Hokum, and a couple of others, that I will practice medicine, not as I have been taught, but as the public would have me practice; and I will

send bills only once a year and for small amounts, and if paying these bills interferes with the purchase of such essentials as an automobile, radio, piano, or fur coat, I will not require payment; that I will affiliate with some large clinic and utilize my time and endeavors for the free care of patients even though they could easily pay for medical attention; that I will get up at all hours of the night, however unnecessary it may be; that I will not attempt to force my patients to do what I think best, but treat them the way their neighbors suggest; that I will always tell the patient what his ailment is, and particularly, in the case of social disease, with untiring effort, I will notify wife or husband, children, father, and mother, and all other relatives and neighbors; that in cases requiring immediate surgical attention, I will not force the issue, but will let my patient wait as long as he cares to and if he dies, I will take the blame; I will sell my car and home, do away with expensive office furniture, discontinue buying medical books and literature, and in every way cut down my expenses so that I can live, however uncomfortably, without charging my patients anything but minimal sums; and that furthermore I will take no vacations or indulge in any form of amusement in order that I may be at all times at the call of my patients; and finally, with all of the above means to help me, should I not be able to make a living, I will not press my patients for aid, but will secure a position as bell-boy or street cleaner where my education will be of decided advantage in promulgating rapid progress towards the acme of existence.

AMEN.

Jour. of A. M. A., 1930.

AND I LEARNED 'BOUT HEMORRHOIDS FROM HIM

By F. D. M., a Doctor's Wife

I've taken my luck as I've found it
I've been sick a good bit in my time;
I've had my pickin' o' doctors,
And some of the lot was fine.
One was a solemn faced interne,
An' one with big eyes an' flat dome,
One was a deft fingered surgeon,
An' one is a man at 'ome.
Now I aren't no 'and with the doctors,
For takin' 'em all along,
You never can tell 'till you've tried 'em,
An' then you are like to be wrong.
There's times when you think they're most hu-
man,

There's times when you'll swear they're a fright!
But the things you will learn from drugs and
scalpel

They'll help set an errin' mind right!

I was young at operations,

Hatin' the time to begin,

A guy from Detroit 'e did me,

And this guy is clever as sin.

Simple it were but my first one,

More like a nightmare—quite dim,

But they say it's the way to good 'ealth, So

Hurry,

An' I learned about hemorrhoids from 'im.

First I was ordered an enema,

Being in charge of the nurse,

An' it gave me a pain at my waist line,

An' I felt a darn sighty worse.

"Essential," no doubt, and "pertificate"

But it took all the rest o' my vim

'Course 'e did what was right,

Like a true surgeon might,

But I learned about 'emmrhoids from 'im.

What did the doctors really think?

Nobody never know.

Somebody asked the surgeon 'elp

Do you 'spose 'ettold 'em true?

When it come to M.D.'s on a case

They're just alike—every one,

They'll tell you it simple an' all this an' that—

Well! I'm glad the d---m things done.

Jour. of A. M. A., 1930.

Mrs. Fredericka, wife of Dr. W. G. Brown,
Alleman, Iowa.

BOOK NOTICES

GENERAL SURGERY. Practical Medicine Series, 1929.

Edited by Evarts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis.

Chicago: The Year Book Publishers, 304 South Dearborn Street. \$3.00.

This volume, like the other numbers in the series issued in previous years, consists of a series of abstracts of published articles appearing during the past year. It is surgical literature published in book form with editorial notes and comments scattered throughout the text. The articles are conveniently grouped and indexed according to the organ or anatomical part so as to be easily accessible. Simple illustrations in a number of the articles are used freely throughout the volume. No attempt is made to cover completely the literature, but only to present well selected articles of general interest. The abstracts themselves are concise and well worded.

The editorial notes and comments by Dr. Graham are valuable. The volume offers to the practitioner,

in convenient form, a good review of the more practical articles appearing in the surgical journals for the year of 1929.

—THOS. J. KINSELLA, M.D.

MEDICAL SERVICE. By Alfred Hendrickson. Augsburg Publishing Co., Minneapolis, 1930.

The book, "Medical Service," is the product of an author who has spent the greater part of his life following the business side of medicine. His understanding of the economic problems involved in the practice of medicine, and the common sense advice with which the pages of the book abound, are founded on experience.

The theme of the discussion is largely determined by the reaction of the patient and his impression of the doctor and the service that has been rendered to him. A book that contains so much good common sense advice, and presenting so well the patients' reactions, could only have been written by an experienced layman.

The first portion of the book discusses the approach to the patient, the examination and the sale of your services to the patient. Proper handling of the patient from the business angle and the factors to be considered in the determination of the fee are very ably discussed.

The second portion deals with credit, proper foundation of accounts, and collections. The reading of this portion will prove particularly illuminating to any doctor who has tried to work out his own system of collection. If the purchaser will utilize the advice contained in this portion, the book will pay for itself many times.

This book is a valuable book for doctors, particularly the men entering practice, and the entire personnel of any clinic and doctor's office, including the registrar, office nurse, telephone operator, and bookkeeper. I do not know the price of the book, but it is worth it.

—HUGO O. ALINOW

NEWS ITEMS

Dr. I. W. Leighton, Scotland, S. D., has disposed of his practice and moved to Chicago.

Dr. J. A. Regnor, formerly in practice at Palisade, Minn., has moved to Markville, Minn.

Dr. S. A. Weeks, Inkster, N. D., has removed to Grenora, N. D., and will continue his general practice.

Dr. K. D. Holmgren, who has been located for many years at Upsala, Minn., has moved to Alleman, Iowa.

Dr. Wallace J. Morlock, Good Thunder, Minn., was recently married to Miss Ada Angier, of Minneapolis.

Dr. P. F. Kearney, for many years in active practice at Bismarck, N. D., died recently at San Francisco, Calif.

Dr. E. C. Gully, Chicago, has accepted a position on the hospital staff, at the State Hospital, St. Peter, Minn.

Dr. J. A. Nehring, Minneapolis, has moved to Preston, Minn., where he has opened offices for general practice.

Dr. H. B. Bailey, who has been in active practice many years at Ceylon, Minn., is now located at Fairmont, Minn.

Dr. L. G. Erickson, Wood Lake, Minn., has moved to Minneapolis, where he plans to open offices for general practice.

Dr. James Duncan, formerly of St. Paul, has become associated with Dr. F. A. Thysell, Moorhead, Minn., in general practice.

Dr. Fred E. Meyers, Eveleth, Minn., has returned to his office after spending two months in Chicago, at postgraduate work.

Dr. John F. Russ, Blue Earth, Minn., died at his home last month after an illness of many months. He was 64 years old.

The fifth convention of the Minnesota State Registered Nurses Association will be held this year at St. Paul, October 15-18.

Dr. H. K. Helseth, Minneapolis, has moved to Appleton, Minn., and opened offices for the practice of medicine and surgery.

Dr. Kenneth Weiler, a graduate of the Northwestern Medical College, Chicago, has recently opened offices at Hastings, Minn.

Dr. and Mrs. T. L. Birnberg, St. Paul, who have been touring Europe during the past few months, returned home last week.

A new hospital is to be erected at Hamilton, Mont., this year at a cost of \$105,000. It will be named the Marcus Memorial Hospital.

Dr. Edward Angle, a former professor at the Minnesota University Medical School, died in Santa Monica, Calif. His age was 75 years.

Dr. H. M. Blegen, Warren, Minn., again heads the board of education of that city as chairman, an honor he has held for many years.

St. Luke's Hospital, Thief River Falls, Minn., will be erected this fall. It will cost about \$100,000, will be three stories high and strictly fire proof.

Dr. C. C. Parks, who for several years practiced in Sioux Falls, S. D., has moved to Florence, S. D., and will have charge of the clinic in that city.

Dr. A. J. Chesley, Secretary of the State Board of Health, reports only five deaths from infantile paralysis in Minnesota for the first seven months of this year.

Dr. H. J. Thornby, Moorhead, Minn., was seriously injured in an auto accident recently. The steering wheel of his car was broken and one end of it pierced his chest.

Dr. John Fulton, Jr., who has been in Oxford, England, for the past few years, is at his old home in St. Paul for a short visit with his parents, Dr. and Mrs. John Fulton.

Drs. Finn Koren and Wm. G. Magee, Watertown, S. D., have formed a partnership for the practice of medicine and surgery. It will be known as the "Watertown Clinic."

Dr. and Mrs. E. H. Nelson, Chisholm, Minn., have returned from a two months trip in Europe. Dr. Nelson attended the International Hygiene Congress during its recent sessions.

Drs. H. M. Freeburg, A. J. Paulson, M. J. Hammond, and G. H. Richards, Watertown, S. D., have organized the Northwestern Clinic for the general practice of medicine and surgery in that city.

The Sioux Falls, S. D., hospital has made arrangements to conduct a five year nurses training course leading to A.B. and R.N. degrees and extension work in physiology and anatomy.

A new hospital will be erected at Dell Rapids, S. D., this fall, as a suitable site has been donated by the citizens and the furnishings and equipment for the various rooms have been arranged for.

Dr. Leon J. Tiber, who has been in active practice for the past 15 years in St. Paul, has moved to Los Angeles, where he has accepted a position as professor of obstetrics and gynecology at the University of Southern California.

Drs. R. T. Westman and L. G. Rigler, Minneapolis, were awarded gold medals at the Southern Minnesota Medical Association held at Mankato, Minn., last month. The awards are based on their proficiency in clinical branches of medicine and surgery.

Dr. A. M. Fisher, Bismarck, N. D., has decided to discontinue for a short time his practice in that city, and will enjoy a long needed rest and vacation. He plans to spend the com-

ing winter in California with his family, then return to New York for some postgraduate work, before returning to Bismarck.

Mrs. Fredericka, wife of Dr. W. G. Brown, Fargo, N. D., died at her home in that city last month, from heart ailment, from which she had suffered for the past two years. Mrs. Brown had been an active worker in church and musical societies. She had a large circle of friends who mourn her loss.

The St. Louis County Medical Society held their annual outing this year at the Eshquaguma Club, located near Virginia, Minn., and a fine program was arranged that included golf, dancing, bathing and various games. Nearly all the doctors brought their wives and children. Dr. W. F. Braasch, Rochester, Minn., was the principal speaker.

Aberdeen and Whetstone Medical Societies held a joint meeting last month with a fine program as follows: "United Fractures," Dr. R. S. Westaby, Madison, S. D.; "Modern Management of Head Injuries," Dr. Anatole Kolodny, Sioux City, Iowa; "Fractures," Dr. G. E. Van Demark, Sioux Falls, S. D. Officers of the Whetstone Valley Medical Society who assisted with the program were Drs. H. C. Peabody, president, and F. F. Pfister, secretary.

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Wednesday morning during September, over Station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters). Speakers: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. September 3, Bowel Obstruction; September 9, Trench Mouth; September 17, Cause of Flatulence; September 24, Acne.

Dr. Frank A. Swezey, Wakonda, S. D., a leader in that community for the past thirty-five years, died here on August 11, of an acute heart attack. Dr. Swezey was a graduate of the University of South Dakota and Rush Medical College. After graduation he located in Wakonda and has continued in active practice, making his calls as usual, up to the day before his death. He is survived by his wife and one son, Lewis. Dr. Swezey was a Consistory Mason, a Shriner and was idolized by young people who have been educated through his philanthropy.

M. J. Knapp, 65 years old, Minneapolis, St. Paul, was fined \$300 or three months in the workhouse by the Hon. J. C. Michael, Judge of the District Court of St. Paul, for practicing medicine without a Basic Science Certificate. Defendant paid the fine. Knapp had been posing as a specialist in rheumatism, nervousness and stomach disorders. He claimed to have a cure for all stomach ailments except cancer. He has been operating in St. Paul and Minneapolis over a period of the last five or six years. The defendant is a man with no medical education and has followed the barber and painting trades during his life time. The case was handled by Mr. Brist on behalf of the Minnesota State Board of Medical Examiners.

The Northern Minnesota Medical Association

The Northern Minnesota Medical Association will hold its annual meeting at Moorhead, Minn., Friday and Saturday, September 19, and 20, 1930.

These meetings are always well attended, and the usual attractive program has been developed for the occasion. The complete program is not yet formulated, but will include the following speakers:

Dr. Wm. Boyd, Professor of Pathology, University of Manitoba, Winnipeg—"Rheumatic Disease of the Heart."

Dr. P. F. Eckman of Duluth, Minn.—"The Classification of Purpura."

Dr. W. C. Alvarez of Rochester, Minn.—"Methods of Diagnosing Gastro-intestinal Disease from a Careful History of the Symptoms."

Dr. H. W. Woltman of Rochester, Minn.—subject not yet announced.

Dr. E. T. Evans of Minneapolis, Minn.—"Orthopedic Care of Poliomyelitis."

Dr. Emil S. Geist of Minneapolis, Minn.—"Bohler's Treatment of Fracture."

Dr. E. W. Humphrey of Moorhead, Minn.—"The Open Treatment of Fractures."

Dr. B. J. Branton of Willmar, Minn.—"Ectopic Gestation."

Dr. W. H. Long of Fargo, N. D.—"Consideration in the Management of Secondary Anemia."

Dr. F. E. B. Foley of St. Paul, Minn.—"Plastic Operation of the Real Pelvis for Hydronephrosis."

Dr. R. S. Ylvisaker of Fergus Falls, Minn.—"Functional Disturbances of the Bowels."

Dr. Wm. F. Baillie of Fargo, N. D.—"Some Indications of Urologic Examinations."

Dr. O. W. Rowe of Duluth, Minn.—subject not announced.

Arrangements are being made to have about twenty papers.

The banquet is to be held Friday evening, September 19, 1930, and Dr. H. C. Cooney of Princeton, Minn., as President of the Association, will give his

annual address. An address on "Publicity" is also to be given by Mr. Benshoof of Detroit Lakes.

A complete program will be ready for mailing early this month and will contain many additions to the above.

CLASSIFIED ADVERTISEMENTS

At Liberty

Experienced technician, graduate nurse, would like position in doctor's office, laboratory or hospital in Twin Cities. Good references. Address 744, care of this office.

Doctor, Attention!

Doctor, let us sell your practice, find suitable associate, assistant, location, or position for you. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Recent Graduate Desires Affiliation

Recent graduate of University of Minnesota desires to affiliate with older man doing major surgery. Ability, personality and appearance will satisfy the most critical. One year country experience. Address 748, care of this office.

Experienced Technician

Young woman, graduate of University of Minnesota, with practical experience in all laboratory work, would like to locate in doctor's office, clinic, or hospital laboratory in Twin Cities. Can do typing and bookkeeping. Good references. Address 747, care of this office.

Practice for Sale

General practice in Minnesota, three towns nearby without M. D. Collections good, roads good. Young man desirable. Will sell equipment for cash or suitable terms. Fifteen miles from good hospital with ambulance service. For information write Dr. A. N. Schanche, Hills, Minn.

Practice and House for Sale

Seven room house, modern in every respect, garage in connection, office furniture, steel instrument case, bookcases, skeleton in oak case, Thermolite and Hanova (Mercury) Violet-ray. Three lots on same block without cost. Practice, good will and influence to get appointments in Life Insurance Company. Address 749, care of this office.

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GENERAL CONSIDERATIONS OF SURGICAL CONDITIONS OF THE THYROID GLAND*

BY WALTER A. DAWLEY, M.D.

Fellow in Surgery, The Mayo Foundation

AND

CLAUDE F. DIXON, M.D.

Division of Surgery, The Mayo Clinic

ROCHESTER, MINNESOTA

Progress of medical science is nowhere better exemplified than in the advances in knowledge of the glands of the body during the last half century. The active principle of the thyroid gland, thyroxine, has been isolated. The relation of the pathologic changes in the gland to the symptoms presented by the sufferer has been determined. The metabolic rate can now be measured accurately, and its relation to dysfunction and hyperfunction of the thyroid gland is understood and is of inestimable aid in the diagnosis and treatment of disorders of the thyroid gland.

The earliest mention of the thyroid gland is attributed to Galen, who described "Two glands in the neck in which moisture is generated," and, "which have no ducts, the humor oozing out." Andreas Vesalius was the next to mention the thyroid gland, in 1543. Realdus Columbus in 1562, noted that the gland was relatively larger

in women than in men. The thyroid gland was first recognized as a single organ by Julius Casserius, who recognized and described what we know as the isthmus. In 1619 the thyroid gland was first recognized as the anatomical seat of goiter.

The first record of surgical attack on abnormality of the thyroid gland is that of 106 operations ranging over a period of 265 years, from 1596 to 1861². The operative procedures in this series consisted largely of ligation, enucleation and partial resection, with lobectomy in a few cases.

Halsted stated that two names dominate surgery of the thyroid gland up to the time of Kocher: Desault, in 1791, gave an account of removal of a thyroid gland which was adherent to the trachea; Hodenus, of Dresden, in 1821, reported six cases of removal of the gland. With Kocher, about 1883, at Berne, began the "golden age" of surgery of goiter. Kocher saw

*Read before the South Dakota State Medical Association, Sioux Falls, S. D., May 20 to 22, 1930.

the mortality from operations on the thyroid gland fall from about eight per cent to well under one per cent. This was remarkable advance in the surgical treatment of disease of the thyroid gland. A brief review of the operative mortality well illustrates this advance, but before quoting the figures, let us remark that many of them deal with operations done before the days of Lister, and before the use of ether as an anesthetic. Billroth reported a mortality of 36 per cent in all his cases in which operation was done before the advent of antisepsis; this dropped to 8.3 per cent in those done after the advent of antisepsis. Since that time, as a result of the better understanding of dysfunction of the thyroid gland, the use of local anesthesia, and improved operative technic, mortality in the well-organized goiter clinic has decreased to less than one per cent.

Three American surgeons preëminently have contributed to the progress of the treatment of the thyroid gland. C. H. Mayo did in this country what Kocher did in Europe. It should be remembered that Kendall isolated thyroxine and discovered the scarcity of iodine in hyperplastic glands, enabling H. S. Plummer to influence the basal metabolic rate by the use of a specific drug. Halsted's contributions to hemostasis, his pioneer work in the use of local anesthesia, and his technic have been important factors in making operations on the thyroid gland as safe for the patient as they are today. In addition, Halsted's careful record of the development of surgery of the gland is of considerable historic value. Crile did much to add safety to surgery of the thyroid gland by many suggestions concerning the time and place of operation, choice of anesthesia, after-care of the patient, and the technic of the operation.

To consider all the men whose work has helped put surgery of the thyroid gland on its present high plane, would be to call the roll of most of the men prominent in the surgical world today, and is obviously beyond the scope of this paper.

Considered from a surgical standpoint, simple colloid or endemic goiter may be briefly dismissed. It is a morbid enlargement of the thyroid gland, but just where the normal physiologic enlargement which occurs as a cyclic phenomenon during the life of every individual, ends, and where the abnormal enlargement called goiter begins, is not clear. Obviously the apparent enlargement depends to some extent on the anatomic position of the thyroid gland

in the neck.

It should be of interest to every surgeon and internist that in regard to simple goiter, "an ounce of prevention is worth a pound of cure." There is some reason now to believe that this disease may not only be checked, but, in many potential cases, prevented.⁸ The administration of small doses of iodine at infrequent intervals during the time just preceding puberty and at puberty, is probably a valuable prophylactic measure. Preferably, an organic iodide should be used.

Unless there is marked mechanical disturbance, operation should not be resorted to in these cases of colloid goiter until after the period of adolescence. Even in adults, in cases of colloid goiter not associated with hyperfunction, operation is indicated for only two reasons: relief of pressure, and cosmetic purposes. Administration of iodine and thyroid extract should be given a thorough trial before conservative subtotal resection of both lobes is resorted to. Radium and Roentgen rays have been used to reduce the size of these glands, as has injection of solutions into the goiter, but so far as we know, these measures have not been reliable, and, it seems to us, may be positively dangerous.

The cause of exophthalmic goiter (Graves' disease) is unknown. The hypothesis formulated by H. S. Plummer best fits in with clinical observations. According to this theory, an unknown stimulus acts, probably through the vegetative nervous system, or the blood stream, and, affecting the thyroid gland, results in the production of an abnormal agent and the overproduction of the normal secretion. It is this abnormal agent, when present in the tissues, that presumably gives rise to the phenomena of the disease.

The factor or factors that constitute the abnormal stimulus are not known. Neither is the mechanism known through which it affects the thyroid gland, nor the nature of the abnormal agent produced by the gland.

Exophthalmic goiter is essentially an affection of young and middle-aged adults, but the extremes of age are not exempt. Cases of congenital exophthalmic goiter seen in infants, at or shortly after birth, have been recorded. Also cases have been seen in patients after the age of fifty years¹⁰.

There is some evidence in the literature pointing to a hereditary tendency to the disease. This may be, as is the case in so many little understood afflictions, either a direct inheritance of

the disease, or the inheritance of an unstable nervous system, predisposing to the development of exophthalmic goiter, in the event of an adequate exciting cause. Overwork, undue mental or emotional strain, and local or general infections, all have been considered to wield an indirect influence on the thyroid gland. In most of such cases, however, one usually can elicit a previous history of nervousness, insomnia, occasional palpitation, profuse sweating, or other symptoms of hyperthyroidism. Pemberton has arrived at the conclusion that, in the United States, the incidence of exophthalmic goiter is high in those regions in which the incidence of endemic goiter is high. He suggested that the nervous and emotional strain resulting from the terrific pace of American everyday life may be the stimulus which drives the thyroid gland to hyperactivity.

A good deal has been written concerning the causation of exophthalmic goiter by iodine. This I would dismiss with the statement that it seems paradoxical that iodine would definitely cause improvement in some cases, as we know it does, and in others bring about the same morbid condition.

A detailed consideration of the pathologic changes in the thyroid gland in exophthalmic goiter is not within the field of the clinician. Suffice it to say that although the disease may be considered a systemic one, its seat is in the thyroid gland, and that there we find the only known pathologic changes characteristic of it. Briefly, these are as follows: There is diffuse hypertrophy and hyperplasia of the parenchymal cells. By hypertrophy is meant an increase in the size of the cells and by hyperplasia, an increase in the number of cells. Both are indisputable evidence of cellular overwork. In the absence of treatment by iodine the parenchymal cells are columnar in type, and there are few or many "infoldings" or papillary-like projections of the parenchyma into the follicles. The colloid is small in amount, and stains feebly. After the administration of iodine, the cells are cuboid or even flat, and the parenchymal infoldings are few or absent.

The clinical signs and symptoms of exophthalmic goiter are generally well known, and its diagnosis should not be difficult. The former teaching that the presence of goiter is essential to the diagnosis has given way, and although it is usually present, many cases are seen in which it is difficult to demonstrate any appreciable enlargement of the gland. The one feature that is always present in conditions of hyperactivity

of the thyroid gland is increase in the metabolic rate. Other symptoms, such as exophthalmos or the various other ocular manifestations, tremor, tachycardia, sweating, intolerance of heat, loss of weight despite good appetite, gastro-intestinal crises, weakness of the quadriceps muscles, and the peculiar psychic status of the patient, may be absent in part, or may be present in any combination. It is in the cases in which only a few of these symptoms predominate, that confusion in diagnosis arises, and it will not be amiss to pause here and emphasize one or two of the most common diagnostic errors.

It is not unusual, in the presence of predominant cardiac disturbance, to consider the case one of primary cardiac arrhythmia, or of insufficiency of some valve, even with decompensation, and to treat it accordingly. Bacon recently called attention to this phase of thyrotoxicosis, and cited seven cases in which the complaint and predominating symptoms pointed directly to disease of the heart. The treatment in such cases is not adequate, consisting as it does of rest in bed, digitalization, promotion of diuresis, limited intake of fluid, and so forth. The etiologic factors resident in the thyroid gland of such patients has led Lahey to call them "thyrocardiacs." Many of these cases go too long unrecognized; the patients are forced to give up their work, and they resign themselves to the life of a chronic invalid. Also, the type of case in which the patient is nearing a gastro-intestinal crisis may be interpreted as one of rather acute gastric disturbance only. These cases present a picture not unlike that of gastric carcinoma. The patients are emaciated, pale and weak; they vomit, and they have lost weight. Unless the possibility of exophthalmic goiter is kept in mind, it is easy to overlook the true nature of the condition. If such possibility is kept in mind, however, careful search will reveal other manifestations of the disease.

Controversy continues regarding the pathologic changes in asymmetric or nodular goiter. These goiters contain one or more adenomas, and the condition is spoken of as adenomatous goiter. The adenomas usually are encapsulated and vary in number and size within wide limits; they may be small and single, or they may be multiple, and so large that the thyroid gland appears as a huge, nodular mass. They practically always undergo various degenerative changes and often become cystic.

These tumors occur usually in the colloid type of goitrous gland, but they may be found also

in a gland which presents the typical histologic evidences of exophthalmic goiter. In case the epithelial cells which line the acini within the adenoma become hyperplastic, the condition indicated is one of toxic adenoma, or adenomatous goiter with hyperthyroidism. It is possible, therefore, for both types of hyperthyroidism, namely, exophthalmic goiter and toxic adenoma, to reside within the same gland. The difficulty in making a distinct clinical differentiation of the two conditions is then readily understood. All asymmetric thyroid glands, however, do not contain well-defined tumors. Such glands may appear nodular because of the variance in size of their lobules, the amount of colloid they contain, or the presence of scar tissue which has resulted from an old localized region of inflammation.

Clinically, toxic adenoma presents a picture much like that of exophthalmic goiter, save for the exophthalmos. Perhaps it is better to speak of the pathologic changes and symptoms of hyperthyroidism, since a distinct line of demarcation cannot be drawn between the two conditions. Treatment also may be considered as that of hyperthyroidism; for both exophthalmic goiter and toxic adenoma, the treatment is thyroidectomy. Strictly speaking, the former is benefited by a course of compound solution of iodine (Lugol's solution) and the latter is less likely to be so benefited; however, the pathologic and abnormal physiologic changes in the two conditions are so intertwined that it is considered wise by some clinicians to give, preoperatively, a short course of compound solution of iodine in all cases of hyperthyroidism. A warning should be given, however, that the iodine will not permanently cure exophthalmic goiter, and its administration should be followed by subtotal resection of the gland.

In the course of the preoperative preparation, the patient is best hospitalized in a quiet, pleasant room, given three meals a day, preferably low in protein, and a lunch between meals. Unless he is too sick, he may be allowed to be up and about for three or four hours daily. Mild sedatives which are not habit forming may help to promote rest in the extreme cases. Compound solution of iodine usually in doses of ten drops three times daily, is given by mouth.

Thyroidectomy should be done when the maximal gain has been attained. The technical steps of the procedure may vary with the different surgeons, but the choice of anesthesia is important. Local infiltration, combined with ni-

trous oxide and oxygen, or with sodium *iso*-amyl-ethyl barbituric acid (sodium amytal), given by mouth, is the anesthesia of choice. It permits of arousing the patient, and having him strain, cough, or speak, thus enabling one to control hemorrhage and to determine the condition of the recurrent laryngeal nerves.

Postoperatively, fluids are given by rectum until the patient is able to take nourishment by mouth, which is permitted at once. Fluid containing compound solution of iodine (Lugol's), 50 to 60 drops, is given by proctoclysis immediately after operation, and is continued in smaller doses for a varying length of time.

Modifications of the operation, such as preliminary ligation of the superior thyroid artery, or resection of one lobe at a time, are not resorted to frequently now. Certainly they are reserved for the most severe cases.

Treatment by Roentgen rays and radium⁴ has its supporters, many of whom report a goodly percentage of cures³. We have had no experience with this form of treatment.

It is the consensus of opinion that nontoxic adenomatous goiters should be resected. Such procedure is justified for several reasons: (1) such goiters are likely to become toxic; C. H. Mayo has said that no less than 60 per cent become toxic sometime during middle life, and H. S. Plummer pointed out that there is a definite chance that hyperthyroidism will develop on an average of fifteen years after the appearance of the goiter; (2) they may become malignant; (3) it may be necessary to relieve pressure on the trachea and the vessels of the neck; and (4) it may be desirable to improve the cosmetic effect.

Malignant change in the thyroid gland is rare. Lahey considers that in a considerable number of such cases the change originates in an adenoma. Wilson reviewed 1430 reported cases up to 1921, and said that practically all of them could be traced to previously existing adenoma. Pemberton stated that 87 per cent of all cases of malignant tumors of the thyroid gland in which operation was done at The Mayo Clinic from 1910 to 1926 inclusive, presented unquestionable evidence that the malignant neoplasm originated in a previously existing goiter. Carcinoma is the most common type of malignant growth, but mixed types have been reported. Here, again, prevention by removal of adenomas is the best treatment.

Inflammation of the thyroid gland, thyroiditis, may be acute or chronic. The acute type may

be purulent or nonpurulent. It is most common in young adults, and may be primary, from direct bacterial invasion of the gland, or secondary to some preëxisting general disease. The pathologic changes in the acute type are similar to those of acute inflammation elsewhere. The process may be sharply isolated to a limited region of the gland; the adjacent parenchyma may be normal. Symptoms are those of acute inflammation added to evidences of pressure on adjacent structures, as the trachea and esophagus. The pain is often paroxysmal, and usually is initiated by deglutition. In the mild, secondary cases, treatment should be conservative; local cold applications usually are sufficient. In the severe cases, however, operation may be necessary, and should consist of as conservative a procedure as is compatible with adequate drainage, removal of necrotic tissue, or relief of intracapsular tension.

Chronic thyroiditis is not uncommon; in a large proportion of exophthalmic goiters some regions of nonspecific inflammation are found. In cases in which the process is widespread the gland is hard, and "woody." In such cases, it is wise to keep in mind the possibility of hypothyroidism developing later. The chronic idiopathic thyroiditis first described by Riedel, and

bearing also the name Riedel's struma, is rare, and clinically is never distinguished from carcinoma.

Specific chronic thyroiditis, such as tuberculosis and syphilis of the gland, are so infrequent as to be almost curiosities.

It is our purpose here merely to review knowledge concerning surgical conditions of the thyroid gland to date.

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CEREBROSPINAL FEVER—DIAGNOSIS AND TREATMENT*

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The rational treatment and control of any specific communicable disease involves a fundamental knowledge of the causative factor and the manner in which it is transmitted to a susceptible individual.

Since the organism was first demonstrated by Weichselbaum, of Vienna, in 1887, and confirmed by the researches of Councilman, Mallory and Wright, during the Boston epidemic of 1897, the disease has been known to be caused by the diplococcus intracellularis meningitidis, or the meningococcus.

The primary habitat of the organism, both in actual cases of the disease and in carriers, is the upper part of the nasopharynx and the posterior

nares. Cases usually occur without demonstrable direct contact with other cases. Doctors, nurses, or other people do not ordinarily contract the disease from cases in hospitals. It is rare for more than one case to occur in a family, and instances of such occurrence are as likely to indicate simultaneous infection as infection of one case from another.

The explanation of this seemingly peculiar but in fact not unusual distribution of an infectious disease, presumably spread by contact, lies in the evidence that carriers of the meningococcus are much more numerous than actual cases of the disease, and that the proportion of the people who are ordinarily susceptible to the disease is very small. The actual manner of spread is, therefore, assumed to be usually by droplet in-

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fection, from carrier to carrier, and finally to a susceptible individual who develops the disease.

As in other serum treated diseases the success of our treatment lies in the early recognition. The chief difficulty here lies in not suspecting the presence of the disease. It is, of course, much more easy to bear in mind the possibility of cerebrospinal fever during the presence of an epidemic than at other times. Cases which go undiagnosed, at least during the first part of their course, are those sporadic cases which often happen to be atypical.

Clinically, our findings differ, depending upon the type present, which may vary from the mild types, which may be overlooked, to the fulminating types, which may succumb before treatment can much more than be established. During the first week in September, 1929, eight cases of cerebrospinal meningitis came to our attention, and I will briefly mention the signs and symptoms which aided mostly in making an early diagnosis.

Early there are no abnormal physical findings, nor may the symptoms be such as to even suggest the gravity of the condition which may be present. In our cases, the onset was always more or less abrupt, in a child or young adult previously well. The age variation was between three and twenty-four years. Chilliness at the onset suggested a systemic invasion. Different symptoms seem to predominate in different epidemics. For example, the majority of the cases seen last fall complained early of abdominal pain, which, associated with the temperature, headache and vomiting, proved a somewhat disconcerting element in one's conclusions. These three symptoms, temperature, headache and vomiting, the so-called "cardinal symptoms," were present in all cases at some early stage of the disease. The presence of an epidemic and the instructions issued by our Public Health Department made parents alert to report any suggestive symptoms, and we were enabled to see some of the patients a few hours following the onset of symptoms. The temperature taken at this early stage is invariably higher, between 103° and 104°; but within fifteen to twenty-four hours this tended to assume a level between 100° and 102°. Frontal and occipital headache was present early. It was of a very intense nature and did not yield to customary palliative drugs given to relieve it. Vomiting was an early and constant symptom, often of projectile character and lasting during the first two or three days only. Although it had no special relation to the

intake of food, in the severe cases all food or water taken was immediately ejected. Rash was a helpful finding when present. It occurred in three of the series seen, petechial in nature and more pronounced on the extremities. It was not an indication of the severity of the disease but merely a septicemic manifestation.

Cervical rigidity and Brudzinski's sign were present fairly early and were more reliable than the Kernig, which was usually indefinite early when most needed. Other neurological signs were not of help in the early diagnosis.

LABORATORY FINDINGS

(1) The blood. All of our cases with positive physical findings showed a marked leucocytosis, ranging between 17,000 and 50,000, with an increase in the polymorphonuclear cells. This polynuclear leucocytosis is characteristically high although cases without leucocytosis are not a great rarity. There seems to be no great prognostic weight to be attached to the white cell count, and even in diagnosis practically all the meningitides, including many cases of tuberculous meningitis, are likely to show polynuclear leucocytosis. (2) The spinal fluid. The crux of the whole diagnosis lies in doing a lumbar or cisternal puncture and examining the spinal fluid. During an epidemic one is warranted in making a lumbar puncture in any case where there is a high temperature preceded by chills, in which there are no physical findings to account for it, regardless of the white blood count. Every effort must be made to make an early diagnosis, resorting to spinal punctures and not waiting until definite symptoms develop. The points to note in examining the spinal fluid are:

(a) The pressure and amount, both of which are increased in cerebrospinal fever.

(b) The naked eye appearance of the fluid. Various grades of turbidity are met with, from very slight opalescence to a highly purulent exudate. The degree of turbidity varies with the stage of the disease at which the puncture is undertaken. In the invasion period, the fluid may be clear; in the acute meningitic stage the fluid shows marked turbidity; later again, as the inflammatory stage passes, the fluid becomes clearer.

(c) Cytology of the fluid. Although the fluid may appear clear there may be an increase in the number of cells up to several hundred, hence it is always necessary to make a cell count when the fluid is clear. Two to eight cells per cubic

millimeter is considered a normal count. In the early or invasion stage of the disease, there is a quantitative increase in the lymphocytic content, a fact which often escapes observation if lumbar puncture be delayed. With the arrival of acute meningitic inflammation, the chief cell present is the polymorphonuclear and at the stage at which most lumbar punctures are undertaken, the cell count is chiefly polymorphous, 70 to 80 per cent. Host observers describe cases of undoubted meningococcus meningitis in which the cell count is chiefly lymphocytic throughout.

(d) Bacteriology of the fluid. Films made directly from the cerebrospinal fluid, or, better still, from the centrifuged deposit, show intra- and extracellular meningococci in the great majority of cases at some time or other in their course. If a careful search be made and no cocci are discovered, it must not be assumed that none are present until the device of incubating the fluid as a whole is undertaken, and until cultures made upon suitable media are found to be sterile. We are all familiar with the appearance of the organism, a gram negative diplococcus identical in appearance with the gonococcus.

The one keystone in the differential diagnosis of cerebrospinal fever is the bacteriological examination of the spinal fluid.

Tubercular meningitis is normally the commonest form of meningitis and may closely simulate meningococcus meningitis, though the onset is likely to be more gradual, the spinal fluid practically clear, with, as a rule, more mononuclear than polynuclear cells; in about 90 per cent of the cases, tubercle bacilli may be found in the fluid if the search in smears from the fibrin webs or from the sediment is careful and prolonged.

The other primary purulent meningitides are only differentiated from the meningococcus meningitis by the presence of the organisms concerned in the turbid spinal fluid. A purulent fluid without bacteria usually means meningococcus infection; a clear one under pressure, tuberculous meningitis, poliomyelitis, meningismus, or cerebrospinal fever in an early or inactive stage.

Poliomyelitis may occur with sufficient meningeal disturbance to simulate closely cerebrospinal fever, but the typical case of poliomyelitis has only a slight degree of clinical meningitis; the children are able to lie on their backs, and there is more stiffness of the lower spine than of the neck.

The most frequent and puzzling condition which presents itself for diagnosis, is the meningismus of other febrile infectious diseases. In children particularly, an acute infection with toxemia is likely to produce meningeal symptoms, usually associated with an increase in amount of cerebrospinal fluid, but almost always without deviation from the normal in its chemical or microscopical characteristics. The only safe rule with these, as with the other diseases, is that lumbar puncture and a study of the spinal fluid be made wherever the meningeal symptoms are definite, both for the sake of diagnosis and to relieve the intracranial pressure.

Our treatment must aim to accomplish:

- (1) The control of the spread of the infection.
- (2) The maintenance of body fluids and prevention of acid base disturbance.
- (3) The maintenance of nutrition.
- (4) The relief of intracranial pressure.
- (5) The use of specific serum to combat the infection.
- (6) The relief of the more distressing symptoms.

The patient should be placed in a well-ventilated quiet room. Nursing and ready laboratory facilities make hospitalization most desirable. Strict isolation should be carried out and aseptic nursing enforced. The wearing of masks by attendants has experimental evidence in its favor and should be insisted upon since the danger lies in apparently well carriers. The individual who carry the meningococcus around in their nasal and throat passages are important but hard to control. The organisms are hard to isolate even when present and there are often other organisms in the throat which resemble the meningococcus and are difficult to distinguish. Undoubtedly healthy carriers are responsible for the persistence of the infection in a community.

The intense vomiting which may persist for two or three days causes marked loss of body fluid, and at the same time prohibits the administration of nourishment. In the severe or late cases, this may materially affect the acid base equilibrium and result in the production of acidosis, which may be offset by the use of glucose intravenously or a combined solution developed by Hartman, which consists of Ringer's solution with the addition of sodium lactate, which provides an excellent buffer solution and may be given intravenously, subcutaneously, or, in children, intraperitoneally. It is put up in concentrated form in ampoules, and for use is diluted twenty-five times with distilled water.

The diet must be adjusted to the patient's condition, and should be as liberal as possible. During the early stage, when food cannot be retained, glucose intravenously will supply the temporary need. A liquid diet should follow as soon as the vomiting subsides, to be replaced as early as possible with a light nourishing diet.

Besides maintaining body fluids, offsetting acidosis and supplying calories, glucose has a fourth value. Weed and McKibben have pointed out that intravenous injections of hypertonic salt solution causes a transient rise followed by a very pronounced fall in spinal fluid pressure which may last for hours. The reason for the lowering in pressure is partly absorption of fluid into the blood, but chiefly a diminution in the formation of cerebrospinal fluid. Hayden advocates the use of glucose rather than of salt solution. He administers 25 per cent solution every twelve hours from the onset of the disease until there is no evidence of increased intracranial pressure. The injection should be made slowly so that one hour is consumed in administering 250 c.c. of a 25 per cent solution.

Spinal puncture with frequent drainage of the spinal canal not only lowers pressure but plays an important rôle in treatment.

Lumbar puncture should be performed on suspicion of meningitis and antimeningitic serum should be at hand to be injected at once, if the fluid is at all cloudy, without waiting for bacteriological examination. This should be done with a clear or blood tinged fluid if the history is suggestive and if other cases are occurring.

Recent work by Sachs disproves the theory of the existence of a true circulation in the cerebrospinal fluid. He shows that substances in the spinal fluid spread by diffusion, but that this diffusion is influenced to a great extent by gravity. Also that reduction of pressure by lumbar puncture creates an artificial circulation toward the point of puncture which is of great clinical importance. If one desires to inject serum with the idea of having it reach all parts of the central nervous system, it is much more effective to make use of gravity by injecting it into the ventricles or basal cisterna than by injecting it into the lumbar meninges. Thus repeated lumbar punctures tend to spread the infection by producing an artificial circulation. He goes on to state that in view of the slow rate of diffusion of a substance (trytan blue in isotonic saline solution) of the same specific gravity as antimeningococcus serum, it would seem advisable,

in order to get the greatest effect from the serum, to administer it by cisternal or ventricular puncture unless the process has already spread into the lumbar meninges.

Routinely, we have used chiefly the spinal, reserving the cisternal method for those cases in which subarachnoid block occurs. Novocaine is used in all cases except in younger unmanageable children, when gas or chloroform proves of invaluable assistance. On lumbar puncture, leaving the stylet partially in the needle, the fluid is allowed to flow slowly, not to spurt, until a normal rate of flow is established. Serum, previously warmed a few degrees above body temperature, is then replaced by gravity. Children can be given practically as large doses as adults. At the conclusion of each injection, the foot of the bed may be raised six to eighteen inches for a period of about three hours, to allow the serum, which is of higher specific gravity than the spinal fluid, to gravitate toward the cerebral meninges.

One point of treatment must always be borne in mind, namely, that the serum has certain limitations. When you recall the appearance of the brain at autopsy, the sulci covered with plastic fibrinous exudate, you wonder how it is possible for serum injected low in the spinal canal to pass up over the convexity of the brain. It is not possible. Even when introduced high up, either in the cisterna or the ventricle, it is thought that one does not get much concentration of serum to those distant parts of the cerebrum, hence we must look upon serum merely as an adjunct to the reparative processes of the body. By removing much of the pus by repeated drainage, and by replacing serum, we can destroy a certain amount of the infection, not all of it. The body must finish up the process and the part which the body plays is very important. Antibodies must be produced and organisms destroyed by the body. In older children the ability to produce antibodies is much better than in babies, therefore, when treating babies, we must be more vigorous in our treatment, giving them serum intravenously, intraspinaly, as well as by the cisternal or ventricular route.

Injections of serum are repeated at twelve hour intervals during the first three days by which time there should be signs of improvement. If prompt results are not obtained, it may be wise to use serum produced by other manufacturers, as it is felt by many that certain sera are of more value in certain epidemics than

others. After the third day, treatments are continued at twenty-four hour intervals. The question which always arises in one's mind is: "When is it advisable or safe to stop the administration of serum?" The best indication for deciding this is the condition of the meningitic exudate as seen at successive punctures. As the process improves, the cerebrospinal fluid gradually becomes more and more clear, the organism disappears, the cells change from a predominating polymorphonuclear to a lymphocyte, and the pressure decreases. The persistence of organisms, especially extracellularly, carries a bad prognosis. It is well as long as the fluid is turbid to the naked eye, to continue serum. Physical findings offer no value; neck rigidity is one of the last symptoms to disappear and may persist after the fluid has only a few cells. When the above indications of improvement are obtained, the serum is stopped but punctures continued at forty-eight hour intervals. At this stage the fluid is still under pressure. The patient is watched closely for any untoward symptoms. It is unusual to have recurrences associated with an increased number of organisms. At times this does occur, especially in young babies. It is more difficult to control and carries a bad prognosis.

In meningitis one uses larger amounts of serum without serious effects than in any other serum treated disease. In almost all cases you get a serum sickness which may prove very distressing. The discontinuance of serum for a week or ten days or the appearance of rash does not prohibit the resumption of serum treatment, should it be indicated. In one of our cases a marked serum rash occurred associated with increased temperature, restlessness, and much distress, loss of appetite, and a white blood count of 25,000. The fear was that he was having a relapse, but the spinal fluid, although under considerable pressure, was clear and had a cell count of only 55. We attempted to control the itching by local applications containing phenol or sodium bicarbonate, by repeated administrations of small doses of adrenalin, and finally, and more effectively, by the use of morphine.

The main symptomatic treatment is for relief of pain and sleeplessness. Lumbar puncture itself is very helpful, the relief evidently being due to a lessening of pressure. Ordinary drugs are useless in relieving the headache and morphine again may be needed.

The intravenous use of serum has possibly received too little attention, but it cannot be

denied that most cases of cerebrospinal fever, as they come to the attention of the physician, are overwhelmingly meningeal, and it is here the battle must be fought and won. It would, however, seem advisable to use it in very early cases, and in obviously septicemic stages as advised by Herrick in doses of 50 to 120 c.c. Serum reactions are much more common by this route.

Of our eight cases there were two deaths. The only complication occurred in one case—total deafness in one ear, which has to date shown no apparent improvement. During the past spring, we have seen four cases of a seemingly more virulent infection. Two of these were fulminating cases and died in the early stages of the disease.

SUMMARY

(1) Lumbar or cisternal punctures are procedures which must be used unhesitatingly if we would make early diagnoses.

(2) The most common early clinical manifestations are temperature, intense headache, continuous vomiting, neck rigidity, and rash.

(3) Experimental work of Sachs disproves the theory of circulation of the spinal fluid. Substances spread by diffusion assisted by gravity.

(4) Successful treatment depends upon the early injection of serum. Injection of serum in the higher reservoirs not only places it in more direct contact with the infection but also assists in its dispersion.

(5) Intravenous use of serum should be employed, especially in early and obviously septicemic stages.

(6) Hartman's buffer solution is valuable in severe cases in replacing fluids and maintaining a normal acid base equilibrium.

(7) Glucose in concentrated solution supplies calories and lowers intracranial pressure.

DISCUSSION

DR. H. A. BRANDES (Bismarck, N. D.): The prognosis in acute cerebrospinal fever is greatly influenced by the early diagnosis and the prompt and intensive administration of the antimeningococcal serum. Dr. Lancaster has pointed out in his paper that we do not recognize the disease early because we do not suspect its presence, and this is especially true in the recognition of the sporadic case. Flexner has shown that when treatment was begun within forty-eight hours after onset, the mortality rate varied from 10 per cent to 20 per cent; after the second day it rose above 25 per cent, and increased to 45 per cent in those cases not treated before the

seventh day. Herrick believes that the mortality rate averages about 50 per cent for the country at large.

Three years ago we had a small outbreak of epidemic meningitis in this community, and in the twelve cases coming under our care there were three deaths. Two patients died within thirty hours after onset of the disease from an overwhelming toxemia. The third patient, who developed a subarachnoid block, was not seen until the eighth day of the disease. In the preserum days this disease had a bad reputation for the number of its sequelæ, but it is quite generally agreed now that if the patient survives he is not likely to be permanently crippled.

While cases differ remarkably in their characteristics, the diagnosis should not be difficult in the presence of meningeal signs and the evidence obtained by lumbar puncture. Neck rigidity is an early and almost constant finding and one of the most valuable of the physical signs. Emphasis should be placed on the importance of instituting prompt serum therapy, as brought out in Dr. Lancaster's paper. Although the organisms may not always be found at the first puncture, the presence of definite meningitic symptoms with turbid or cloudy spinal fluid, justifies the prompt administration of the specific serum. Subsequent taps will usually confirm the clinical diagnosis and if it is found later not to be due to the meningococcus no harm will have been done.

Whether the infection is transported to the meninges from the nasopharynx by the lymphatics through the cribiform plate of the ethmoid, or through the blood stream, is still a matter of debate. Herrick recognizes a premeningitic septicemia, and was able to isolate the organism from the blood stream in 45 per cent of his cases before there was

evidence of meningeal involvement.

In the treatment of this disease, we have followed Herrick's method of giving serum intraspinally and intravenously, and we believe that this method has given us our best results. We have had no serious reactions when observing the usual precautions and giving atropine hypodermatically before the intravenous administration of the serum.

Like the pneumococcus, the meningococcus is not a consistent species but consists of several closely related types. These strains differ in their reaction towards specific agglutinins, which is an important point to remember in the treatment of the disease. The essayist has made reference to this, advocating a change of the serum if satisfactory results are not obtained within two to three days. One can readily ascertain if the serum employed is not satisfactory by testing out its agglutinating properties against the meningococcus present in the spinal fluid.

According to Herrick, agglutination should take place in a dilution of at least 1:400, and under a dilution of 1:200 the serum is practically of no therapeutic value.

A recent article from the Hygienic Laboratory at Washington, D. C., reports the finding of a new meningococcus like organism in the spinal fluid of fourteen cases of acute cerebrospinal fever, occurring during a single outbreak in Chicago the latter part of 1928. The organisms were not agglutinated by any of the polyvalent serums on the market. The mortality rate in these cases was 30 per cent.

The concentrated polyvalent serums now on the market overcome the difficulty we formerly had in giving large doses of the serum by the intraspinal route.

Dr. Lancaster has given us an excellent paper on a timely subject.

“ . . . A MAN NAMED BROWN . . . ”

BY R. W. LAGERSEN, M.D.

MINNEAPOLIS, MINNESOTA

Darkened lights, casting darker shadows—the air of the corridor heavy with the scent of flowers. Silence—except for the muted sibilance of whispered voices from the chart room.

“Tired?”

“Oh sort of,” the night nurse confessed. “What time of the night is it, three o'clock? That's always the worst—got to start the four A. M. charting pretty soon.”

She adjusted her cap, brushed a bit of dark hair from before her eyes and sighed lightly.

“Oh, well, it's all in the night time.”

The white coated interne grinned appreciative-

ly. Not so bad, that, for the wee sma' hours. He regarded her speculatively.

“Coming off nights soon?”

“Two more weeks.”

The interne sighed heavily. But it might not have meant a thing. Too bad, though, about the night duty. Cute kid too, but at that a fellow ought to get some sleep; have to take her out some night; got to assist Blank in the morning; certainly good looking; wish she was off this night duty.

“Yeah-h,” he stifled a yawn and hesitated between the two lures.

He rose, regretfully.

The nurse smiled brightly, too brightly, as a matter of fact. Her roommate would have recognized the quality of the smile. Smoke screen. *Certainly* she wanted him to stay a bit longer. But—

“Going?”

“Yeah, I guess so. Gotta be up at seven—’sist Dr. Blank.”

“We-ell, see you in sixty days.”

And then a light flashed over the nurse’s head. She rose swiftly.

“Justa minute. Be right back.”

The light rubber shod footsteps receded down the corridor.

Certainly a nice girl, blue eyes, brunette, kinda rare, blue eyed brunettes, um-m, that is, this type was, clever in classes, too, yunh-h. Got to take her out sometime. Yawn. Got to—where’d she go, anyway?

Again the footsteps. The nice girl, blue eyes, brunette, clever, what was the rest of it?—returned.

“Where’d you go?”

“Down in 218—hope that’s the last light for awhile.”

“Who you got down there?”

“Oh, I don’t know, les’ see.” She was breathless for the moment. She’d hurried back, you know. “Oh, yes, 218. Here is the chart—a man named Brown, got something the matter with his stomach, has to have hot water bottles on it all the time. Say!” The night nurse was suddenly alert, “You’d better get a history of him. He just came in an hour ago, but you know what Blank will say if there isn’t some sort of a history and physical on the chart in the morning.”

Another nurse, her roommate, for instance, would have recognized the device; but *certainly* she wanted him to stay a little longer. Fair? Maybe not. But on the way downstairs he might stop to talk to someone else. The blue eyes were guileless.

The interne groaned. Bed looked good now. Shouldn’t have stayed in the first place. That is, so long. Yeah, be four A. M. before he knew it. But he also knew Dr. Blank.

“All right, Justa minute. I’ll go down there and get the dope, come back here and write it up.” He picked up a pad, and armed with a pencil, disappeared into 218.

The little nurse laughed to herself a bit, but softly, noiselessly. “M-mh. Technique? I’m not so dusty.” She continued to smile.

“ . . . a man named Brown . . . ” When John Brown, lawyer’s clerk, had felt “that pain,” as he described it in conversation with Mrs. Brown, for a period of two months he reluctantly began to consider the advisability of having something done about it. Recently it had become too insistent for comfort, even in its less insistent moments; something would, apparently, have to be done about it.

At its inception, Mr. Brown had gone to the office of a physician practicing in the community, who had asked numerous questions bearing on John’s past history; upon the health and past history of Mrs. Brown, and the health and past history of John’s ten months old son; and upon the past history of John’s antecedents (insofar as he could remember) to the third and fourth generation. And then had asked innumerable questions relative to how John felt; where he felt that way, and when, and so on. And so on and so on. And so on and so on and so on, the while punctuating his questions, interpolations and asides with sundry pokings and probings into the various available sections of John’s anatomy, at the end of which he discoursed learnedly and (to John Brown) esoterically, on what gastro-intestinal and gallbladder X-ray studies might reveal; and of what an advantage such studies might prove to Mr. Brown from the point of view of health, and to himself as an adjunct to diagnosis. As a matter of fact, John learned that such examinations as the physician described were absolutely essential to a diagnosis of his particular case, and that only in the event that such examination was made could the physician hope to treat his ailment in an intelligent manner.

And then he learned that such service as described would cost a sum considerably in excess of his salary for a period of two weeks. . . .

John decided to let the matter ride for a time, and perhaps his distress might go away. He anxiously hoped so.

Mrs. Brown hoped so too, and in the intervals when young John Junior was not being bathed, fed, diapered or being lulled to sleep, would give the matter of Mr. Brown’s loss of weight, inability to eat certain foods, distress, and general air of worry not a little of grave thought. And interpolated in her thought was computation of hospital bills, doctor’s fees, possibly nurses—how much was it the doctor said the X-ray would cost?—and wonder how they would manage if John did not get better, and had, indeed, to go to a hospital. She divined that it was the ex-

pense that had deterred John from having the examinations the doctor had recommended. No, he hadn't told her that; but divination of that sort is an integral part of the makeup of all, or nearly all, lower middle class American wives. *How much does it cost?*

But finally the matter was taken out of John's hands, and of Mrs. John's. One night he was awakened by excruciating pain. "In the pit of my stomach, just like a green-apple cramp, only ten times worse," was the way he described it to the hastily summoned physician.

That individual, after as comprehensive an examination as was possible in a home, and that at two o'clock in the morning, cheerfully informed John that it was "the hospital for him," and then mercifully gave him a hypo, pending the arrival of the ambulance.

And then he was on his way, leaving Mr. and Mrs. Brown to face the realization that the rent, grocery and meat bills were due the first of the month, and that only ten days away. And then there was the installment on the radio, without which radios were sometimes taken away. And as the doctor had said, the hospital would require a ten days deposit, in advance.

Just then John Junior awakened, and yelled lustily.

"Never mind, Mary," John said manfully, (the hypo was taking hold and he felt a little better), "never mind, Mary, we'll manage somehow."

And of course they would manage—somehow.

And therefore John Brown came to the hospital, and formed a brief interlude in the lives of an interne who really should have been asleep, and an amiable nurse who wanted him to stay up a little longer. The young doctor got "the dope" as he put it, on the green-apple cramp, and, of course, a lot more; the rest he didn't get—that about the rent, and about the insurance premium, and the grocery and meat bills. And certainly not that about the radio. John didn't say anything about that.

Separated by a short flight of descending stairs, the second corridor of St. Stephens is exactly six feet from the second pavilion, but they are as far apart, one might say, as the Colonel's lady and Judy O'Grady. And in matters of hospitalization, as in other human activities, it makes not a little difference whether one is Judy, or the lady; for the latter will lie somewhere in that area beyond the two noiselessly swinging doors which is known as the pavilion; Judy goes to the corridor. That is

where we find a man named Brown; an individual with just a shade too much income to be classed as a charity patient, and yet with far too little income to pay the premiums on health, as we shall see.

He is representative of his class, a group comprising the greater part of our population, such classification being dependent upon income, and further dependent upon the duration and severity of illness and upon the handicap convalescence imposes.

At ten the next morning, John Brown was beginning to feel the pain again. The hypo of the night before was wearing off. But at that moment the physician, accompanied by Dr. Blank, surgeon, stepped through the pavilion doors and stood at the bedside.

The physician and Dr. Blank discussed the matter in the patois of their kind. "Hypo, now, of course—saw him last night—board-like rigidity—tenderness upper right quadrant—some reference to epigastrium," descriptive phrases tossed lightly back and forth. John didn't understand them except that about the tenderness. That he understood.

For Dr. Blank had just at the moment applied pressure to an area of John's anatomy that was exquisitely tender; and that pressure was immediately translated into excruciating agony.

Dr. Blank noted the signs of distress; doubtlessly felt badly himself. But the pain was of value to him as a guide, so he elicited it again. Then he turned to the physician.

"How about the radiographs?"

"Haven't any. John here makes about thirty dollars a week, and when he came to me about two month ago, he couldn't afford it. Isn't that right, John?" The physician laid his hand on John's arm. "X-ray examinations, with all that I should have liked to do at that time would cost John just about two weeks salary."

Dr. Blank mused a moment, and then again applied pressure to Mr. Brown's abdomen. John winced.

"All right, better not do it now. Might stir things up. We'll do him in about an hour." He turned to John: "Never mind about it, you'll be all right."

A nurse came with another hypo; John knew he was a very sick man, and also knew that in the matter of an hour or so he would be asleep and under the fingers of Dr. Blank, who would inspect, repair, replace or remove whatever of anatomy he deemed best.

By a remarkable coincidence, Dutton, senior

member of the firm of Dutton, Dutton, Benchley, Dutton and Benchley, had for three days been troubled by the same identical set of symptoms that his clerk had experienced for the past two months. He, not being troubled by economic qualms, consideration of grocery, meat, and insurance bills, and installments on radios, had turned what of unfinished business he had under way over to other members of the firm, and gone to the hospital for diagnosis and treatment.

Further, he also had gone to St. Stephens, and now lay in the pavilion, not twenty feet from the bed occupied by his clerk. He was well satisfied; needed the rest anyhow he told himself. Only three days he had had his trouble, he couldn't be very badly off. Blank had said, a few minutes before, that "they'd find out all about him." Dutton reached for the morning paper.

John took what the anesthetist would have described as a rotten anesthesia; she hoped that the next one would not fight so, would go to sleep easier, and once asleep, "stay put."

She, however, did not know that John's last waking thought was about how Mary would manage, and about those bills and about that insurance premium due in fifteen days. And then besides, just as he was about to slip off into unconsciousness, he found out that he was supposed to be a poor risk, because he had waited so long, or something like that. Someone, perhaps the interne, talking to the anesthetist. John was worried, which accounted for the poor anesthesia, and that, in turn, may have been a factor in the development of a pneumonia a few days later.

Dutton came under the exploring fingers of Dr. Blank five days later. That five days had been spent in careful examinations, gastro-intestinal studies, X-ray of chest, tests of elimination, blood analyses; those things without which, in these days of laboratory medicine, any diagnosis may be incomplete. The intervals between various examinations were filled with pleasant conversation with day and night specials, who attended his wants and boosted his ego, and incidentally and more important, his optimism.

As a consequence of his lack of worry and his optimism, perhaps, he went under the anesthetic tranquilly, was what Blank would have described as a "good risk," and after two or three days of discomfort, spent an enjoyable two weeks convalescing, and viewing almost with disfavor the coming of the day when he would have no reasonable excuse for remaining longer.

Now then, by a second remarkable coincidence, John Brown's cousin, ne'er-do-well, a man of no family, and a person given to no steady or lucrative employment, became ill, with, again, the same identical syndrome suffered by John and by John's employer.

St. Stephens has a few ward beds, paid for by the city, and John's cousin, in the course of events, came to occupy one of these. But save for the frequency of back rubs, difference in location, changes of linen and number of towels allotted, he got the same careful diagnostic service as did Mr. Dutton. Several days elapsed before he came to operation, an interval in which he was given the benefit of a thorough examination; as thorough, in fact, as that to which Mr. Dutton was subjected. Then, and not until then, was treatment instituted.

In the course of time, John Brown and Mr. Dutton left the hospital, Dutton to go home and rest, or perhaps to convalesce in the mountains or at some watering place; John, back to his job, and worry about the bills and about his insurance premium. His salary went to the hospital, with half the bill still owing, and an arrangement made whereby a certain portion of his bi-monthly salary check would go to the hospital's cashier. John's cousin was remaining for two weeks longer, on account of the fact that the social service department of the city charities had reported that his home conditions were such that the ends of health were better served if he remained until he was better able to cope with the ordinary problems of life.

And there, concretely, is an interesting and well recognized situation. Dutton, wealthy, good diagnosis and treatment, and then adequate rest. John's cousin, ditto. John, himself, no diagnostic procedure beyond a history and physical examination; and, after treatment, back into the harness to convalesce as well as he might under the stress of work and worry.

He must work, for the reasons outlined above; that he has an insurance premium in the last of the days of grace is an incentive. That, and the bills accumulated while he has been in the hospital. True, he had some health insurance. But Dr. Blank presented a bill, as did also the physician in attendance anterior to the advent of the surgeon. They also must be paid. Salaries are garnishable, and medical credits, as time goes on, become shorter and shorter. So back to work John goes, and drags out a weary convalescence.

It is perfectly obvious that numerous factors

enter into the case of John Brown, of the John Browns, as a matter of fact. Extramedical economic factors, such as income, lack of saving on the part of Mr. Brown, installment buying in its various forms, enter into the picture to some extent. They are doubtless important, but do not enter into this thesis, because their solution would not solve the problem of John Brown's health, or take care of the premium on health that he himself cannot pay.

Perhaps the most pertinent factor is the fact that as medicine has advanced, diagnosis has to a large extent become a matter of clinical and X-ray laboratory procedure. Whereas in earlier medicine, the physician examined his patient by means of the unaided special senses, today the diagnostician brings to his aid intricate and skilled (*ergo* expensive) special laboratory procedure. Some one must pay; that some one is the patient.

Briefly, it might be pointed out that hospitals follow two general plans in charging for clinical and X-ray laboratory procedure; one known as the "per piece" basis, the other, a blanket charge. The latter means simply that all admissions are charged a fixed laboratory fee; in which event the unlimited facilities of the clinical and radiographic departments are at the disposal of the doctor and patient without additional charge. It is used in few hospitals for two reasons, the first of which is that it constitutes an unjust form of socialism. Mrs. White, who, we will say, comes into the hospital for no other purpose than a rest, and needs not to avail herself of laboratory facilities, helps to pay the freight on Mr. Dutton, who has need of such service. The second reason, and as important as the first, is that many doctors or groups of doctors have their own diagnostic facilities, and therefore will not send their patients to hospitals having as a part of their policy the charging of a blanket laboratory fee. They prefer to send their patients to a hospital that charges for such service on a per piece basis. The reasons therefore are perfectly obvious.

But John Brown, whether his diagnosis is arrived at in a private office, clinic or hospital, is expected to pay for such service, either lump sum or on a per piece basis. Medicine, private medicine, that is, becomes, as time goes on, more and more of a business, and with the arrival of group practice in our midst, big business at that. And with its coming, the healing art becomes more and more impersonal, not only as regards the patient and his affliction, but with respect

to his check book as well. Health, it would appear, has become expensive, but to John Brown only. And because there has been established a premium on health, John does not get it. Or rather, he gets what he can afford to pay for.

The matter of group practice leads very naturally to a consideration of the second great factor tending to increase the cost of health. "Group practice," "clinic," and synonymous terms, bring at once the thought of specialists and specialization. Specialization means more education, and that in turn implies greater educational costs; and that cost is, ultimately, passed on to the patients upon whom the specialist works. Group practice, fortunately for John Brown, tends to make the cost lower than if he were sent to each necessary specialist in their several offices; but here again is the old story of lump sum or blanket charge, versus per piece, in this case being applied to the services of diagnosticians and therapists and surgeons. John Brown pays, if he can afford it. Clinics have as one of their departments, and rightly, a very adequate credit bureau. It is true, of course, that certain groups or large clinics will give John Brown adequate service whether or not he is financially able to pay the bills for such service; but it is the exceptional group that does so. A large group is a business and usually retains a business manager. Business managers, as a rule, are impersonal.

A third factor enters into the cost of medical service to John Brown. Dr. Blank devotes a large share of his time to practice in charity wards. As a matter of fact, unless he husbands his time, he may find that the greater share of his working time is given to charity rather than to his own private patients. Be that as it may, he is inclined to think his duty to charity done when he thus gives his time and effort; and with the private patient who comes to him he exacts a normal fee. John Brown, then, just as does his more wealthy employer, pays the freight on that portion of humanity that cannot afford to pay at all. It is a quasi socialism, unjust because it distributes the cost where it cannot comfortably be borne.

To return to the hospital. Here also, aside from the clinical and radiographic charges, we find the cost to the patient markedly increased during the last fifteen years, and especially since the war. Originally hospitals were merely nursing homes; today the trend is toward bigger and better hospitals, large physical plants in which the cost of each bed is far in excess of such

former costs.

Costs for groceries and provisions, coal and labor (the three major budgets) have increased markedly in recent years; and with respect to the last of the three, that is, labor, the rise has been as one is to seven, and that in fifteen years. In other words, in a certain hospital where formerly labor charges for certain departments and for a specified period of time were one thousand dollars, today they are seven thousand. And of this marked increase in cost of operation of physical plant, John Brown pays, or is expected to pay, his proportionate share.

These then are the various vectors, the resultant of which is a premium on health; a premium which has tended constantly to rise, and upon which no dividends are declared. John Brown, representative of the lower American middle class, cannot afford to pay it. He is just "a man named Brown," but he represents the major portion of our population.

One speculates what will happen, as time continues, to the John Browns and their medical problems. The increasing prevalence of group practice, the most rational method of bringing medical aid to the sick, suggests a possible solution. Most charity organizations of medicine, whether connected with a university hospital, city hospital, or not, are in effect, group practices. The thought intrudes itself that such services might be extended, either through community, state or national subsidy, or through insurance companies, to John Brown himself, as well as to his cousin. The idea emerges that John Brown might be *entitled* to health. Thus with personal freedom; thus with our present educational system.

It is well recognized that health is a matter of state and national significance, in the last analysis as important as considerations of freedom and education. It has lagged behind. Medicine has not, but adequate machinery for bringing modern medicine to the John Browns has not yet been developed.

Problems of health are rarely individual. Control of epidemics, state interest in the early diagnosis and arrest of tuberculosis, the use of police power in the case of venereal disease; here community interest is obvious. But so also is the case of John Brown, late a patient in the corridor of St. Stephens. He has no communicable disease, but when he does not get early diagnosis as afforded by the clinical and X-ray laboratories; when he remains away from medical aid because he feels he cannot afford such serv-

ice; or when he returns to work before convalescence is complete because economic pressure demands it, then is he also a candidate for any of the communicables. The old saw to the effect that an ounce of prevention is worth a pound of cure has here a peculiar aptness. John Brown emerges as a state and national problem.

The corridor. Another night of dim lights and dark shadows. Scent of many flowers. Another term of nights for the dark haired nurse. The same interne.

"Tired?"

"Oh, sort of. Three o'clock, isn't it? That's always the worst; got to start the four A. M. charting pretty soon."

"Tough, isn't it? It's a great life."

"Um, yes." The nurse smiled and sighed lightly. Suddenly a light flashed over her head. She rose swiftly.

"Just a minute. Be right back."

"Where you going?"

"Two eighteen."

"Two eighteen? Say you remember that fellow, a man named Brown, that was down there four months ago? Well, I saw him on the street the other day, poor fellow's got Tb, going out to a San tomorrow. Seems he had an old focus in his left apex for a long time and it flared up after he left the hospital. Went back to work too soon. Yunh-h—that's what he said. Wish we'd have X-rayed him."

"Gosh, Tb."

"Yeah, tough, isn't it. Thought you might like to know about it. Came up here to tell you, but I forgot it for a minute."

The light flashed again. Another John Brown?

The nurse turned to the interne. "Wait a minute. Be right back."

EVALUATION OF THERAPEUTIC RESULTS IN ESSENTIAL HYPERTENSION

In a series of forty unselected hypertensive patients, seriously and enthusiastically treated by DAVID AYMAN, Boston (*Journal A. M. A.*, July 26, 1930), by the daily administration of a few drops of dilute hydrochloric acid, the symptoms were definitely improved in thirty-three, or 82 per cent. Ayman finds that the symptoms associated with uncomplicated essential hypertension may frequently be relieved by the suggestion inherent in any seriously and enthusiastically prescribed drug or method of therapy. This is the probable explanation of many successes reported in the past.

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the *Journal-Lancet* is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—882.

A white woman, 64 years of age, was admitted to hospital April 27, 1930, complaining of swelling of the left leg and sciatic pain on the left side. Swelling of the leg was of two weeks duration, and at about the same time patient noticed a mass in the lower right quadrant. The mass was very painful. She had had "neuritis" in the leg for about two and one-half years. Two years ago she had thyroidectomy.

She was seen by a physician in August, 1922, when she complained of a bloody, foul smelling, vaginal discharge since June of that year. She gave a history, at that time, of having a papilloma removed one year before from the urinary meatus; this was thought to be a metastatic carcinoma. In October, 1924, radium was inserted after curettage. No sign of malignancy was noted in the uterus although it was enlarged and hard. In May, 1927, examination showed the cervix to be occluded. The uterus was about the same size but a firm mass was felt in the right fossa.

Examination showed the left leg uniformly enlarged to the hip. Abdomen was slightly distended and tender through the lower right quadrant. A tumor mass was felt over the pelvic rim on the right side. Examination otherwise negative. Blood pressure was 230/110 on entrance and 170/80 on May 5, 1930. Urinalysis showed at times trace to 2+ albumin but otherwise was negative. Blood: hemoglobin 50 per cent; erythrocytes 3,500,000; leucocytes 9,400 with 75 per cent polymorphonuclears. This remained about the same on three different examinations. Patient died June 11, 1930.

Post-mortem report. Marked emaciation. Complete atresia of the vagina. No ascites. Heart 370 grams; no disease. A few small metastatic tumor nodules in the lungs, and terminal bronchopneumonia. One metastatic nodule in the liver. Both kidneys show hydronephrosis, due to obstruction of the ureters in their course through the broad ligaments. Massive carcinoma of the body of the uterus with infiltration of the pelvic lymph nodes, pelvic peritoneum, extension into the ilia. Carcinomatous mass in the right ovarian vein.

Diagnosis. Carcinoma of the body of the uterus with bilateral hydronephrosis.

Comment. The duration of the carcinoma in this case was approximately ten years. Carcinoma of the corpus is not nearly so malignant as carcinoma of

the cervix uteri. Death in this case was apparently due largely to uremia because of obstruction of the ureters. This is the usual cause of death in carcinoma of the uterus. There were a few metastases in the liver and lungs. Metastases are seldom found outside of the pelvis. The increased blood pressure is interpreted as due to the bilateral hydronephrosis.

Autopsy—20—341.

The case is that of a man, 55 years old, who drank alcohol excessively. On September 8 he was thrown from a heavy farm wagon and the wheels passed over his thighs, causing comminuted fractures of both femora. When brought to the hospital a few hours later he was noisy and difficult to manage. During the night he was very boisterous, noisy, and semidelirious. Buck's extension was applied, the legs were splinted, and he was given a hypodermic of morphine. He went to sleep following the injection of morphine and his breathing was regular and normal. Blood pressure 110/70. He remained unconscious from that time until his death. There was incontinence of urine. The conjunctival reflexes were decreased. Chromatropin would not dilate the pupils sufficiently for a satisfactory examination, but the oculist reported that there were no choked discs. There was excessive perspiration. On the fourth day the pulse became rapid and weak. Blood pressure 100/50. Death on the fourth day. Temperature ranged from 100° on admission to 101° on the day of death. X-ray showed no fracture of the skull.

Post-mortem report. Multiple comminuted fractures of both femora at the junction of the middle and lower thirds. Extensive crushing of the soft tissues about the fractured bones. Abundant plasma filled with fat droplets at the site of the fractures. Edema of the brain. On section large numbers of small hemorrhages about one mm. in diameter are found throughout the white substance in the cerebrum, cerebellum, pons, medulla, and the upper spinal cord. Sections through these hemorrhages, stained with sudan III, show fat droplets within capillaries in the central part of the hemorrhage.

Diagnosis. Fat embolism of the brain.

Comment. The early development of coma following a fracture is a suggestion of fat embolism. At the site of the fracture fat cells are ruptured and small particles of fat readily gain access to the venous circulation.

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THE JOURNAL-LANCET EDITORIAL BOARD

We are pleased to announce that Dr. Albert W. Skelsey, of Fargo, N. D., is the new secretary of the North Dakota State Medical Association, and as such Dr. Skelsey becomes Associate Editor of the JOURNAL-LANCET. We offer Dr. Skelsey a hearty welcome and know that the JOURNAL-LANCET will feel his influence through its editorial column and in other activities in North Dakota. We expect to be able to announce the addition of other names to our editorial staff in North Dakota in our next issue.

THE BRITISH MEDICAL ASSOCIATION

The meeting of the British Medical Association which was held in Winnipeg, Man., August 26 to 29 last, was expected to be primarily a neurological meeting but developed into a mixed medical meeting, which was quite alright.

Dr. William J. Mayo, of Rochester, Minn., speaking before the surgery section made some very shrewd observations, as he usually does. He asserted that happiness and health are often as much a state of mind as of body. He believes that both patient and surgeon share the benefits of anything tending to aid one in facing a crisis in illness. To quote, "When a man is about to go on the table in an operating room,

if he wishes a visit from a minister in whom he has faith it gives him confidence which no science can furnish." This we see borne out every day in our contact with our patients. Dr. Mayo goes on to say that quackery is losing its power in America.

While attending the state meeting in Duluth and when that meeting was holding its last session, the announcement was given out that Columbia University was offering a course in neurological medicine which would continue during the winter months. At about the same time we had an announcement from Berne, Switzerland, saying that on the 31st of August they would offer a few days session in neurological medicine. That, of course, was a very wonderful thing. We believe this was arranged for the eastern man. However, we cannot imagine that a man from Duluth or Winnipeg might get to Switzerland in time for the meeting even if he were to engage an aeroplane. We would point out that the dates set for meetings of this kind be given publicity further in advance so that definite arrangements may be made and lived up to. If it were possible we would have been pleased to make the trip to Switzerland, personally.

HOSPITALS AND PATIENTS

More harmony might exist between hospital and patient if it were generally understood by the patient what service the hospital is to render and something about what the cost of that service is. Patients in many cases have a very vague understanding of what duties rest upon the hospital, as they may have a wrong idea of what expense those same services entail.

For example, the owners of a hospital are expected to pay the cost of general nursing care, which is no small item, and furnish room and board for the patient. The price for this care and service is quoted by the week to the patient and perhaps may seem exorbitant to the inexperienced patient, but these figures are the result of years of experience on the part of the hospital and it is necessary that they operate at a profit if they are to continue. We believe in most cases if these figures were checked up they would be found to be very fair, and that the best service possible was being furnished at the figures quoted.

Unfortunately we have had brought to our attention the case of a friend of the JOURNAL-LANCET, a nurse, experienced, reliable and with many years of conscientious service to her credit, who was thoroughly mistreated and neglected

by both hospital and doctor, into whose care she had given herself. She had an acute appendix and was taken to the hospital in question while on a trip in the East and was operated the following day instead of immediately as her case demanded. The surgeon was rough and unsurgical and left his patient in a day or two to spend the winter in Florida. The patient was able to pay her expenses including private room and one special nurse, which should have been sufficient. The nurses, general and special, were irresponsible and giddy; they swore, talked back to the patient and were wholly unprofessional. For instance, the nurse came into the room to give the patient her morning bath and took the wash cloth that had been used the day before for the bath, and with which the patient's feet had been washed previously. The patient objected and offered her own clean wash cloth, but she was met with the reply that they preferred to use the hospital supplies and that the wash cloth in question would be quite alright. We take exception to the present day nurses, of which there appear to be many, who are saucy, impudent, ill-mannered and altogether unethical. We feel that there is something lacking in their training, or that they are taken in for training when they are wholly unfit for the work and are in training only through influence.

The town in which this occurred was sufficiently large to support a well equipped, efficient hospital. Yet the superintendent, a great big woman, accompanied by two floor nurses and a great big doctor, came into the patient's room and proceeded to pull down the bedclothes without a word of explanation to the patient as to what they might be about to do. They had come in to take out the stitches, but they chose to do it in just that way. A patient is entitled to consideration and kindness, which we consider contributing factors in recovery many times. In choosing a hospital the patient should take this into account if it is possible to do so before entering. In acute cases it is sometimes not possible to make these inquiries. When this patient was sufficiently recovered to express herself she did so very forcefully to the management of the hospital. This may explain to some extent the lack of harmony between patients and nurses, and the existence of a state of antagonism bordering on open warfare, and invariably the patient gets the worst of it.

What is to be done about it? The conscientious doctor cannot watch patient, nurse and hospital. The nurse and the hospital should be re-

sponsible for certain things. All patients cannot afford to employ two or three nurses; few cases really require this amount of care.

In the case cited, the patient was eight months recovering sufficiently to feel able to return to her work; we should say she was eight months recovering from mis-treatment rather than from any illness. We consider it quite a proper statement to make that it is one nurse in twenty-five who is a careful, sensible, thinking woman. If such were not the case cases of this kind would not come to our attention.

ADVERTISING AS A PART OF MEDICAL ETHICS

On Friday, September 5, 1930, the *Minneapolis Journal*, claiming to be the Northwest's greatest newspaper, printed an editorial on Vagaries of Medical Ethics. The article suggests that doctors are too ethical. We agree that in many cases doctors are too ethical; this also may be true in any profession, as we believe it is. As in many professions at the present time, the doctors find their ethics in a state of disturbance from within.

Fortunately there is a law on our statute books setting out clearly the amount of advertising that a medical man may do; the methods that he may employ in his advertising are strictly limited. The law is carefully worded and may be interpreted by anyone interested and he will know therefrom to what extent he may advertise without being subject to persecution, prosecution or criticism.

The matter of medical ethics has attracted widespread interest since the case of the Chicago doctors has come to attention. As is generally known two distinguished members of the Chicago Medical Society "bolted" and set out clearly a list of prices to be adhered to by themselves. They were associated with or rather set up public clinics to which this list of prices applied and offered encouragement to the person of moderate means in obtaining medical services which they could afford and about which there would be no misunderstanding as to charges. One of these doctors had at one time been president of the Chicago society and was a man of known reputation and ability, the other also was well and favorably known in his profession.

These men evidently concluded that it was better to practice medicine skillfully and honestly and offer their services through clinics to the

person of moderate means, of which the great bulk of the clientele is comprised in any community, rather than to go on with a great deal of uncertainty as to price and services as had been their custom in the past and is still the custom with the medical profession at large.

We feel that we can do no better than to quote the *Minneapolis Journal*, as they but express our sentiments in a large degree, when they say:

"To a mere layman it seems clear that some sorts of medical advertising are legitimate and helpful, while others are not. For itself, THE JOURNAL has long barred the improper sort from its columns. We can see no good reason why medical societies should not be equally discriminating, or rather, because of their equipment, more inerrant.

"Almost any ethical doctor will admit, in moments of frankness, that the medical code of ethics is sadly in need of revision, and that the one thing that prevents it is professional jealousies. In short, the same human reactions are at work that produce jangles and jars in other human organizations, such as bar associations, political committees, business groups, women's clubs—and churches.

"The reported successes of the two clinical enterprises in Chicago in bringing the cost of expert medical care within the reach of those of moderate means, in other words, of the great bulk of any community, could scarcely have been achieved without advertising. Code or no code, was that sinfully unethical? Well, the Chicago Medical Society says "yes" in one case, and "no" in the other."

Herschel V. Jones, former editor and publisher of the *Minneapolis Journal* and father of Carl W. Jones, present publisher of that same paper, was loudly acclaimed from one side of the country to the other when he made it his purpose to eliminate from publication in his paper those articles of advertising pertaining to medicines which might in any way appear out of order. For the immediate present it may not make much difference what action medical societies take in regard to ethical advertising, as the medical profession generally is suffering from lack of business. But medical ethics is due for a revision of code which time, no doubt, will bring about. The same uncertainty that enters into every business at the present time is manifesting itself in the medical profession. It will right itself gradually and naturally, though slowly, and for the present we offer no cure-all, although we would like to try it.

NEWS ITEMS

Dr. G. A. Lierle, Canova, S. D., has sold his practice and is now located at Quincy, Ills.

Dr. J. R. Ostfield, who has been at Bowdle, S. D., for many years, has moved to Java, S. D.

Dr. Frank L. Watkins has been named as the new health officer at the city of Great Falls, Mont.

Dr. R. H. Slocumb, Edgemont, S. D., has disposed of his practice and moved to Maywood, Calif.

Dr. L. J. Happe, who has been located for some years at St. Paul, has moved to Marshall, Minn.

The new St. Anthony Hospital, located at Oakes, N. D., was opened and dedicated last month.

Dr. K. W. Brimmer, Bruce, S. D., has moved to Volga, S. D., and opened offices for general practice.

Dr. Oscar Daignault, Benson, Minn., was painfully injured recently in an auto accident near that city.

An addition to the Medical Arts Building, St. Paul, has been erected this season at a cost of over \$70,000.00.

Dr. R. A. Carrow, Minneapolis, has moved to Caledonia, Minn., where he has opened offices for general practice.

Dr. M. J. McKenna, Graceville, Minn., is now located at Enderlin, N. D., and will open new offices for practice in that city.

A \$25,000 personal injury suit has been started against Dr. M. B. Benjamin, Jasper, Minn., by the Bakke estate of that city.

Dr. and Mrs. A. L. Hammerel have returned to their home at Glendive, Mont., after an absence of four months in Europe.

Dr. A. G. Allen, formerly in practice at Hot Springs, S. D., has moved to Denver, Col., where he will continue in general practice.

Dr. William Duncan, a recent graduate of the University of Minnesota, is now associated with the Watertown Clinic, at Watertown, S. D.

Dr. H. E. Landes, who disposed of his practice at Kenmare, N. D., is spending several months traveling with his family in Europe.

Dr. E. L. Goss, a veteran physician at Carington, N. D., has been named superintendent of the new Indian hospital at Belcourt, N. D.

Dr. L. A. Fritsche, the well known New Ulm, Minn., physician, is making an active canvass for the office of congressman from that district.

Dr. Marland Williams, St. Paul, is now located at Cannon Falls, Minn., where he has purchased the practice of the late Dr. A. A. Conley.

Fifty-three doctors were elected new members of the Southern Minnesota Medical Association at their annual meeting held at Mankato last month.

Dr. P. D. Peabody, Webster, S. D., with his family, have returned from Winnipeg where the doctor attended the British Medical Association meeting.

A new clinic has been organized at Fargo by three well known physicians of that city, Drs. F. L. Hannah, A. J. Clay and W. E. G. Lancaster.

Dr. James T. Priestly, Rochester, Minn., was recently married to Miss Klea Palica, of Kenosha, Wis. They will continue to reside at Rochester.

Dr. J. E. Campbell, St. Paul, who has been traveling in Europe during the past three months, has returned and again is at his office during regular hours.

Dr. Horace Newhart, Minneapolis, was among the prominent doctors who presented a paper at the British Medical convention held at Winnipeg last month.

Dr. R. B. Radl, Dickinson, N. D., will spend a year in postgraduate work on a fellowship in internal medicine at the University Hospital, Minneapolis.

Dr. J. F. Russ, for many years a practicing physician at Blue Earth, Minn., died recently from the effects of an operation for cancer of the stomach.

Dr. V. J. LaRose, Bismarck, was among the list of physicians from North Dakota who attended the British medical meeting held at Winnipeg last month.

The North Dakota State Nurses Association will hold its annual meeting this year at Fargo,

on October 14-15. Miss Esther Teichmann, Fargo, is president.

A new hospital has been recently opened at New England, N. D., which has been sadly needed for many years. Dr. S. Moske will be the medical director.

Dr. N. H. Lufkin, Minneapolis, was recently married to Miss Florence M. Kirk. They have gone on a wedding trip to Europe, and will be absent until about October 15th.

The wives of the Moorhead doctors are planning to entertain the wives of all visiting doctors who will attend the annual meeting of the Northern Association to be held in that city on September 19 and 20.

Dr. F. E. Williams, who has been located at Lennox, S. D., has moved to Wakonda, S. D., and opened new offices for general practice. Dr. Williams is a graduate of the Northwestern University Medical School.

Dr. J. B. Hartzell, son of Dr. T. B. Hartzell, Minneapolis, was married to Miss Esther, daughter of Dr. C. H. Mayo, Rochester. After an extended wedding trip they will take up their residence at Cleveland, Ohio.

Dr. W. A. Mommich, who has been at the head of the X-ray department at the U. S. Veterans Hospital, Fort Snelling, for many years, died recently at Prescott, Arizona. His body was brought to Minneapolis for burial.

Dr. F. L. Wilcox, Walker, Minn., passed away this month after a service of over 30 years practice in Northern Minnesota. No physician in the state had a larger circle of devoted friends and all are deeply grieved at his passing.

Dr. Walter E. List, superintendent of the Minneapolis General Hospital for the past ten years, has resigned and will return to his old home at Cincinnati, where he will become the head of the Jewish Hospital of that city.

The first reunion of the graduates of the Glen Lake Sanatorium, Hennepin County hospital for tuberculosis patients, will be held on September 20th, and it is expected that over 2,000 graduates will return for the homecoming festivities.

Dr. M. L. Stiffler, prominent St. Paul physician, died suddenly on September 8th, at the early age of 43 years. Dr. Stiffler was the founder of the Child Guidance Clinic of that city. He was very active in the World War Veterans Bureau, having seen active service in the late war.

The following officers were elected at the annual meeting of the Southern Minnesota Medical Association held at Mankato, last month: Dr. J. T. Schlesselman, Mankato, president; Dr. L. W. Steiner, Winona, first vice president; Dr. P. F. Holm, Wells, second vice president; and Dr. M. C. Piper, Rochester, secretary-treasurer.

One hundred thousand advance programs of the Inter-state Postgraduate Medical Association of North America, reading like a "Who's Who" of the medical profession, have been mailed out for the annual meeting in Minneapolis, October 20-24. The gathering of the postgraduate medical men is recognized by physicians as the greatest scientific meeting of the year.

The regular September meeting of the Minnesota Academy of Medicine was held at the Town and Country Club last week with the following program of papers being presented: "Observations on Serotherapy in Scarlet Fever," Dr. Alexander Stewart. "Morphine as a Diagnostic Agent," Dr. Arthur A. Zierold. "Leg Lengthening of the Tibia in Infantile Paralysis," Dr. Wallace H. Cole.

The regular monthly meeting of the Chisago-Pine County, Minn., Medical Society was held on August 26th, at Pine City, Minn. After a fine banquet was served the following papers were presented: "Eczema of the Scrotum," Dr. C. G. Kelsey, Hinckley; "The Various Methods of Tonsillectomy," Dr. W. T. Pearson, Finlayson; "The Relation of Nose and Throat Infections to the Chest," Dr. E. J. Borgeson, Minneapolis; "Collapse Therapy" (Lantern Slides), Dr. F. F. Callahan, Pokegama.

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Wednesday morning over Station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters). Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. The program for the Month of October will be as follows: October 1, "Finish the Job." October 8, "Cancer of the Rectum." October 15, "Father of Medicine." October 22, "Food Fads." October 29, "Finger Infections."

The Aberdeen District Medical and the Whetstone Valley Medical Society held a joint meeting at Enemy Swim Lake August 23. After a dinner at the hotel the following program was rendered: "Ununited Fractures," Dr. R. S. Westaby, Madison, S. D.; "Modern Manage-

ment of Head Injuries," Dr. Anatole Kolodny, Sioux City, Ia.; "Fractures," Dr. G. E. Van Demark, Sioux Falls, S. D. Lively discussion of all the subjects presented was engaged in. A very profitable meeting to all. Many of the wives accompanied their husbands and had a social gathering during the program. Those in attendance were: Drs. H. C. Peabody, P. D. Peabody, F. F. Pfister, P. Blegan, Percy Peabody, Jr., of Webster; P. B. Jenkins, and A. E. Bostrom of the State Board of Health, Waubay; Allen, Rosholt; Goldie Zimmerman, and G. E. Van Demark of Sioux Falls; Plodenek, J. L. Calene, M. C. Johnston, R. D. Wilson, J. D. Whiteside, and C. E. Meyer, of Aberdeen; C. J. Lundquist of Leola; R. S. Westaby of Madison; J. E. Bruner of Frederick; A. V. Pearson of Peaver; R. G. Harris of Wilmot; J. F. D. Cook of Langford.

PROGRAM

International Assembly of the Inter-State
Postgraduate Medical Association
of North America

MINNEAPOLIS, MINNESOTA

October 20th, 21st, 22nd, 23rd, 24th, 1930

Monday, October 20th, 7:30 A. M.

- Diagnostic Clinic (Surgical). Dr. Hugh Cabot, Consulting Surgeon, Mayo Clinic, Rochester, Minn.
Diagnostic Clinic (Oto-Laryngological). Dr. Samuel J. Kopetzky, Professor of Otolaryngology, New York Polyclinic Medical School and Hospital, New York, N. Y.
Diagnostic Clinic (Surgical). Dr. Alfred T. Bazin, Professor of Surgery, McGill University Faculty of Medicine, Montreal, Canada.
Diagnostic Clinic (Gynecological). Dr. John O. Polak, Professor of Obstetrics and Gynecology, Long Island College Hospital, Brooklyn, N. Y.

Intermission for Review of Exhibits

- Diagnostic Clinic (Surgical). Dr. Donald C. Balfour, Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.
Motion Talking Picture: "Cesarean Section." Dr. Joseph B. Delee, Professor of Obstetrics, Northwestern University Medical School, Chicago, Ill.
Picture presented by
Dr. M. Edward G. Davis, Assistant Professor of Obstetrics and Gynecology, Rush Medical College of the University of Chicago, Chicago, Ill.

Noon Intermission

- Diagnostic Clinic (Medical). Dr. Henry A. Christian, Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical). Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.

Obstetrics

Address: "The Composition of the Blood in Pregnancy with Special Relation to the Calcium Content." Dr. Otto H. Schwarz, Professor of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Mo.

Address: "Pregnancy in the Presence of Uterine Tumors." Dr. Edmund B. Piper, Professor of Obstetrics, University of Pennsylvania School of Medicine, and Graduate School of Medicine of the University of Pennsylvania, Philadelphia, Pa.

Address: "An Analysis of One Thousand Consecutive Labors with the Child Presenting in an Obliquely Posterior Position." Dr. John W. Williams, Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore, Md.

Intermission for Review of Exhibits

Obstetrics (Continued)

Address: "The Toxemias of Pregnancy from the Standpoint of the General Practitioner." Dr. P. Brooke Bland, Professor of Obstetrics, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Address: "Prenatal and Postnatal Care in Obstetric Practice." Dr. William B. Hendry, Professor of Obstetrics and Gynecology, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "Clinical Types of Nephritis." Dr. Henry A. Christian, Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston, Mass.

Address: "Visceral Pain." Dr. Robert D. Rudolf, Professor of Therapeutics, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "The Relationship of Disorders of the Digestive Tract to Anemia." Dr. William B. Castle, Assistant Professor of Medicine, Harvard University Medical School, Boston, Mass.

Dinner Intermission, 7:00 P. M.

Oto-Laryngology

Address: "Tonsillectomy—When?" Dr. Fielding O. Lewis, Professor of Laryngology, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Address: "Acute Systemic Infections of Otitic Origin." Dr. Samuel J. Kopetzky, Professor of Otolaryngology, New York Polyclinic Medical School and Hospital, New York, N. Y.

Address: "The Salivary Glands." Dr. William V. Mullin, Head of the Department of Oto-Laryngology, Cleveland Clinic, Cleveland, Ohio.

Address: "Cardiospasm." Dr. Harris P. Mosher, Professor of Laryngology, Harvard University Medical School, Boston, Mass.

Address: "Surgery of the Pharynx." Dr. Arnold Schwyzer, St. Paul, Minn.

Address: "The Treatment of Varicose Veins." Dr. Alfred T. Bazin, Professor of Surgery, McGill University Faculty of Medicine, Montreal, Can.

Address: "The Relative Values of Irradiation and Operation in the Treatment of Uterine Tumors." Dr. John O. Polak, Professor of Obstetrics and

Gynecology, Long Island College Hospital, Brooklyn, N. Y.

Address: "Non-Operative Treatment of Retroversion of Uterus especially in connection with Pregnancy." Dr. George H. Ryder, Clinical Professor of Obstetrics, Columbia University College of Physicians and Surgeons, New York, N. Y.

Tuesday, October 21st, 7:30 A. M.

Diagnostic Clinic (Surgical). Dr. Edward W. Ochsner, Professor of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, La.

Diagnostic Clinic (Urological). Dr. William E. Lower, Director, Cleveland Clinic Foundation; Associate Professor of Genito-Urinary Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Diagnostic Clinic (Surgical). Dr. Carl A. Hedblom, Professor of Surgery, University of Illinois College of Medicine, Chicago, Illinois.

Diagnostic Clinic (Urological). Dr. William F. Braasch, Professor of Urology, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Intermission for Review of Exhibits

Diagnostic Clinic (Medical). Dr. Harlow Brooks, Professor of Clinical Medicine, University and Bellevue Hospital Medical College, New York, N. Y.

Diagnostic Clinic (Pediatric). Dr. Alan G. Brown, Associate Professor of Pediatrics, University of Toronto Faculty of Medicine, Toronto, Canada.

Diagnostic Clinic (Surgical). Dr. Dallas B. Phemister, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Ill.

Noon Intermission

Diagnostic Clinic (Urological). Dr. William C. Quinby, Clinical Professor of Genito-Urinary Surgery, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical). Dr. Irvin Abell, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

Address: "The Causes and Treatment of Some of the Circulatory Failures in Surgery." Dr. Dallas B. Phemister, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Ill.

Urology

Address: "Renal Tumors." Dr. William C. Quinby, Clinical Professor of Genito-Urinary Surgery, Harvard University Medical School, Boston, Mass.

Address: "Silent Lesions of the Genito-Urinary Tract." Dr. William E. Lower, Director, Cleveland Clinic Foundation; Associate Professor of Genito-Urinary Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Intermission for Review of Exhibits

Urology (Continued)

Address: "Stricture of the Ureter." Dr. William F. Braasch, Professor of Urology, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "Transplantation of the Ureters." Dr. Robert C. Coffey, Clinical Professor of Surgery, University of Oregon Medical School, Portland, Oregon.

Address: "Tuberculous Disease of the Kidney." Mr. Henry Wade, F.R.C.S., Surgeon, Royal Infirmary, Edinburgh; Senior Lecturer in Clinical Surgery, University of Edinburgh, Edinburgh, Scotland.

Respiratory Tract

Address: "The Treatment of Pneumonia." Dr. Alvah H. Gordon, Associate Professor of Medicine, McGill University Faculty of Medicine, Montreal, Canada.

Address: "The Surgical Treatment of Pulmonary Tuberculosis." Dr. Carl A. Hedblom, Professor of Surgery, University of Illinois College of Medicine, Chicago, Ill.

Address: "The Treatment of Empyema." Dr. Edward W. Ochsner, Professor of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, La.

Dinner Intermission, 7:00 P. M.

Address: "The Choice of Anesthesia with Particular Reference to the Rights of the Patient." Dr. Hugh Cabot, Consulting Surgeon, Mayo Clinic, Rochester, Minn.

Address: "The Periodical Physical Examination." Dr. Harlow Brooks, Professor of Clinical Medicine, University and Bellevue Hospital Medical College, New York, N. Y.

Esophagus and Stomach

Address: "The Treatment of Gastric and Duodenal Ulcer." Dr. Donald C. Balfour, Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "Surgical Aspects of Chronic Dyspepsia." Dr. Irvin Abell, Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

Address: "The Practical Control of Gastric Motility." Dr. T. Wiugate Todd, Henry Wilson Payne Professor of Anatomy, Western Reserve University School of Medicine, Cleveland, Ohio.

Address: "The Location of Metastases from the Genito-Urinary Tract and from the Thyroid Gland." Dr. Bernard H. Nichols, Head of the Department of Roentgenology, Cleveland Clinic, Cleveland, Ohio.

Address: "Abdominal Surgery and the General Practitioner." Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University School of Medicine, President of the Inter-State Postgraduate Medical Association of North America, Nashville, Tenn.

Wednesday, October 22nd, 7:30 A. M.

Diagnostic Clinic (Pediatric). Dr. Isaac A. Abt, Professor of Pediatrics, Northwestern University Medical School, Chicago, Ill.

Diagnostic Clinic (Surgical). Dr. Charles H. Mayo, Associate Chief of Staff, Mayo Clinic; Professor of Surgery, University of Minnesota, Graduate School of Medicine, Rochester, Minn.

Diagnostic Clinic (Medical). Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical). Dr. John B. Deaver, Emeritus Professor of Surgery, University of Pennsylvania School of Medicine, and Professor of Surgery, Graduate School of Medicine of the University of Pennsylvania, Philadelphia, Pa.

Intermission for Review of Exhibits

Diagnostic Clinic (Pediatric). Dr. Fritz B. Talbot, Clinical Professor of Pediatrics, Harvard University Medical School, Boston, Mass.

Diagnostic Clinic (Surgical). Dr. Nathaniel Allison, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Illinois.

Diagnostic Clinic (Surgical). Dr. Dean D. Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Noon Intermission

Diagnostic Clinic (Surgical). Dr. John F. Erdmann, Professor of Surgery, New York Postgraduate Medical School, New York, N. Y.

Address: "The Eye-Grounds in General Diagnosis." The Joseph Schneider Foundation Presentation. Dr. Frank E. Burch, Professor of Ophthalmology and Oto-Laryngology, University of Minnesota School of Medicine, Minneapolis, Minn.

Address: "The Treatment of Hernia." Dr. John B. Deaver, Emeritus Professor of Surgery, University of Pennsylvania School of Medicine, and Professor of Surgery, Graduate School of Medicine of the University of Pennsylvania, Philadelphia, Pa.

Address: Dr. A. H. M. J. Van Rooy, Professor of Obstetrics and Gynecology, Medical Department of the University of Amsterdam, Amsterdam, Holland.

Address: "Psychoses of Different Age Periods." Dr. William A. White, Professor of Psychiatry, George Washington University Medical School, and Professor of Mental and Nervous Diseases, Georgetown University School of Medicine, Washington, D. C.

Intermission for Review of Exhibits

Fractures

Address: "Operative Treatment of Fractures." Dr. Charles L. Scudder, Assistant Professor of Surgery, Harvard University Medical School, Boston, Mass.

Address: "Fracture of the Shoulder." Dr. Paul B. Magnuson, Assistant Professor of Surgery, Northwestern University Medical School, Chicago, Ill.

Address: "Fractures Involving the Foot and Ankle Joint." Dr. Fraser B. Gurd, Lecturer in Surgery, McGill University, Faculty of Medicine, Montreal, Canada.

Address: "Infections and Their Treatment." Dr. Dean D. Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Dinner Intermission, 7:00 P. M.

Address: "Relationship of the Eye to General Disease." Dr. Charles H. Mayo, Associate Chief of Staff, Mayo Clinic; Professor of Surgery, University of Minnesota, Graduate School of Medicine, Rochester, Minn.

Address: "Unclassified Glycosurias—Their Significance and Outcome." Dr. Elliott P. Joslin, Clini-

cal Professor of Medicine, Harvard University Medical School, Boston, Mass.

Pediatrics

Address: "Fetal Peritonitis and Sequelae." Dr. Isaac A. Abl, Professor of Pediatrics, Northwestern University Medical School, Chicago, Ill.

Address: "The Prevention and Treatment of Rickets with Especial Relation to the Value of Sunshine." Dr. Alan G. Brown, Associate Professor of Pediatrics, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "The Dietary Treatment of Epilepsy in Children." Dr. Fritz B. Talbot, Clinical Professor of Pediatrics, Harvard University Medical School, Boston, Mass.

Orthopedics

Address: "Infectious Arthritis." Dr. Nathaniel Allison, Professor of Surgery, Rush Medical College of the University of Chicago, Chicago, Ill.

Address: "Ankylosing Operations for the Relief of Lumbo-Sacral and Sacro-Iliac Pain." Dr. Edwin W. Ryerson, Professor of Orthopedic Surgery, Northwestern University Medical School, Chicago, Illinois.

Address: "Pott's Disease—Symptoms and Treatment." Dr. William G. Turner, Clinical Professor of Orthopedic Surgery, McGill University Faculty of Medicine, Montreal, Canada.

Address: "Relaxed Knees and Torn Crucial Ligaments and the Disability following such an Injury." Dr. George E. Bennett, Associate Professor of Clinical Orthopedic Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Thursday, October 23rd, 7:30 A. M.

Diagnostic Clinic (Surgical). Dr. Burton J. Lee, Professor of Clinical Surgery, Cornell University Medical College, New York, N. Y.

Diagnostic Clinic (Medical). Dr. Elsworth S. Smith, Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Mo.

Diagnostic Clinic (Surgical). Dr. Frank H. Lahey, Director, Lahey Clinic, Boston, Mass.

Diagnostic Clinic (Medical). Dr. Emanuel Libman, Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons, New York, N. Y.

Intermission for Review of Exhibits

Diagnostic Clinic (Surgical). Dr. Walter E. Dandy, Associate Professor of Clinical Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Diagnostic Clinic (Medical). Dr. Charles A. Elliott, Professor of Medicine, Northwestern University Medical School, Chicago, Ill.

Diagnostic Clinic: "The Diagnosis and Selection of Cases for Sympathetic Ganglionectomy and Trunk Resection in the Treatment of Peripheral Vascular Diseases." Dr. Alfred W. Adson, Associate Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn., and Dr. George E. Brown, Associate Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Noon Intermission

Diagnostic Clinic (Medical). Dr. John H. Musser, Professor of Medicine, Tulane University of Louisiana School of Medicine, New Orleans, La.

Diagnostic Clinic (Surgical). Dr. E. Starr Judd, Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, President-Elect American Medical Association, Rochester, Minn.

Address: "Types and Treatment of Rheumatism." Dr. Russell L. Haden, Chief of the Medical Division, Cleveland Clinic, Cleveland, Ohio.

Dermatology

Address: "The Differential Diagnosis of Syphilitic and Non-Syphilitic Eruptions." Dr. Howard Fox, Professor of Dermatology and Syphilology, University and Bellevue Hospital Medical College, New York, N. Y.

Address: "X-ray Treatment of Skin Malignancies." Dr. James M. Martin, Professor of Radiology, Baylor University College of Medicine, Dallas, Texas.

Intermission for Review of Exhibits

Circulatory System

Address: "Coronary Thrombosis and its Sequelae." Dr. Emanuel Libman, Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons, New York, N. Y.

Address: "The Treatment of Essential Hypertension." Dr. Elsworth S. Smith, Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Mo.

Address: "X-ray Examination of the Heart and Aorta." Dr. George W. Holmes, Assistant Professor of Roentgenology, Harvard University Medical School, Boston, Mass.

Address: "The Diagnosis and Treatment of Pericarditis—The Cardiac Condition Most Frequent Missed." Dr. Charles S. Williamson, Professor of Medicine, University of Illinois College of Medicine, Chicago, Ill.

Address: "Anemias Simulating Pernicious Anemia." Dr. John H. Musser, Professor of Medicine, Tulane University of Louisiana School of Medicine, New Orleans, La.

Dinner Intermission, 7:00 P. M.

Malignant Diseases

Address: "Surgery and Irradiation in the Treatment of Mammary Cancer." Dr. Burton J. Lee, Professor of Clinical Surgery, Cornell University Medical College, New York, N. Y.

Address: "Cancer of the Stomach." Dr. Frederick N. G. Starr, Professor of Clinical Surgery, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: "Cancer of the Rectum." Dr. John F. Erdmann, Professor of Surgery, New York Postgraduate Medical School, New York, N. Y.

Address: "Reconstructive Surgery of the Face," illustrated by colored motion picture. Dr. Joseph E. Sheehan, Professor of Plastic Surgery, New York Postgraduate Medical School, New York, N. Y.

Industrial Medicine and Surgery

- Address: "Underlying Principles of Traumatic Surgery." Dr. John W. Martin, Vice-President and Director of the Surgical Department, U. S. Fidelity and Guarantee Company, Baltimore, Md.
- Address: "Industrial Toxemias." Dr. Jean S. Millard, Goodyear Rubber Company, Akron, Ohio.
- Address: "Preventive Medicine in Industry." Dr. Cassius H. Watson, American Telephone and Telegraph Company, New York, N. Y.
- Address: "Industrial Surgery as a Specialized Field." Dr. Roy D. McClure, Surgeon-in-Chief, Henry Ford Hospital, Detroit, Michigan.
- Address: "End Results of Fractures in Industry." Dr. Loyal A. Shoudy, Chief Surgeon, Bethlehem Steel Company, Bethlehem, Pennsylvania.

Friday, October 24th, 7:30 A. M.

- Diagnostic Clinic (Medical). Dr. David P. Barr, Professor of Medicine, Washington University School of Medicine, St. Louis, Missouri.
- Diagnostic Clinic (Surgical). Dr. George W. Crile, Director, Cleveland Clinic Foundation; Professor Emeritus of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.
- Diagnostic Clinic (Medical). Dr. Leonard G. Rowntree, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.
- Diagnostic Clinic (Surgical). Dr. Arthur Dean Bevan, Clinical Professor of Surgery and Head of Surgical Department, Rush Medical College of the University of Chicago, Chicago, Ill.

Intermission for Review of Exhibits

- Diagnostic Clinic (Medical). Dr. Henry S. Plummer, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Brain and Central Nervous System

- Address: "The Differential Diagnosis of Intracranial Lesions." Dr. Alfred W. Adson, Associate Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.
- Address: "Tic Douloureux." Dr. Walter E. Dandy, Associate Professor of Clinical Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.
- Address: "The Importance of a Consideration of the Autonomic Nervous System in Medicine and Surgery." Dr. William J. Mayo, Chief of Staff, Mayo Clinic, Rochester, Minn.

Noon Intermission**The Thyroid Gland**

- Address: "Late Results of Thyroidectomy for Hyperthyroidism." Dr. Charles A. Elliott, Professor of Medicine, Northwestern University Medical School, Chicago, Ill.
- Address: "Mortality Factors in Thyroid Disease." Dr. Frank H. Lahey, Director, Lahey Clinic, Boston, Mass.

- Address: "The Thyroid Heart." Dr. Stewart R. Roberts, Professor of Clinical Medicine, Emory University School of Medicine, Atlanta, Ga.
- Address: "Cause of the Specific Pneumonia of Exophthalmic Goiter." Dr. Henry S. Plummer, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.
- Address: "Newer Methods for the Management of the Bad Risk Patient." Dr. George W. Crile, Director, Cleveland Clinic Foundation; Professor Emeritus of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.
- Address: "Acute Abdominal Conditions." Dr. Arthur Dean Bevan, Clinical Professor of Surgery and Head of Surgical Department, Rush Medical College of the University of Chicago, Chicago, Ill.

Liver and Gall-Bladder

- Address: "The Significance of Jaundice." Dr. David P. Barr, Professor of Medicine, Washington University School of Medicine, St. Louis, Mo.
- Address: "The Value of Tests for Liver Function." Dr. William J. Kerr, Professor of Medicine, University of California Medical School, San Francisco, California.
- Address: "Cirrhosis of the Liver." Dr. Leonard G. Rowntree, Professor of Medicine, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.
- Address: "Surgical Lesions of the Bile Ducts." Dr. E. Starr Judd, Professor of Surgery, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.
- Address: "Observations on the Etiology of Gall Stones." Dr. Andrew C. Ivy, Professor of Physiology and Pharmacology, Northwestern University Medical School, Chicago, Ill.

The acceptances of the following distinguished guests were received too late for them to be included in the above program. They will, however, take part in the program some time during the Assembly:

Positive

- Dr. Ferdinand Sauerbruch, Prof. of Surgery, Medical Department, University of Berlin, Berlin, Germany.
- Address: "Operative Treatment of Cataract." Dr. Emil de Grosz, Prof. of Ophthalmology, Medical Department, University of Budapest, Budapest, Hungary.

Tentative

- Dr. Ray Lyman Wilbur, Secretary of the Interior, U. S. A., Washington, D. C.
- Dr. Paul Clairmont, Prof. of Surgery and Head of the Department of Surgery, Medical Department, University of Zurich, Zurich, Switzerland.
- Dr. Edmund Gros, American Hospital in Paris, Paris, France.

BANQUET**Friday Evening, October 24th**

Addresses by Distinguished Citizens of the World.

MISCELLANY

**COLLECTIONS AND THE EIGHTEENTH
AMENDMENT**

EDITOR OF THE JOURNAL-LANCET.
SIR:

In a recent address by a leading medical officer in an adjoining state there was made in substance the statement that the Eighteenth Amendment was breeding a disrespect and flouting of our laws, and that the youth of the country were rapidly going to Hades.

The associate who uttered the statement hails from a state which from its admission to statehood has never had any other than dry laws, and it is difficult for an outsider to comprehend how the Volstead act could possibly make his dry state less dry.

We fully realize that no perfect law has ever been enacted by man and never will be; however, we have our statutory laws against adultery, incest, burglary, and murder, and yet we perceive that they are daily violated in all parts of the country and contemptuously treated by the lawless element; but that is not a valid reason for repealing them for the substitute, anarchy.

Lest the Raskob and Dupont propaganda dazzle our judgment, let us remember what took place on "Main Street" in any of our municipalities on any gala day under the saloon regime. Hundreds intoxicated, and the money flowing to the breweries.

My present argument for backing up the Eighteenth Amendment as it stands are pages from my annual register, not forgetting that I began the practice of medicine in the year 1890, and have had no assistant.

1906—Cash received during this wet year.....	\$3,500.00
1907—Cash received during this wet year.....	3,485.00
1908—Cash received during this, the first municipal dry year.....	3,976.00
Omitting the war prices and the "flu" years we find for:	
1923—Cash received (dry year).....	6,923.00
1924—Cash received	7,278.00
1925—Cash received	7,506.00
1928—Cash received	7,800.00

The years I have omitted will show up equally as well. I will admit that temperance and prohibition are matters of education; but without considering the moral aspect of the alcoholic question, the bank balance is sufficient to make me stand back of the Eighteenth Amendment until something better is instituted to lessen the consumption of alcohols.

RATIONAL, M.D.

CLASSIFIED ADVERTISEMENTS

For Sale

For sale cheap, practically new Victor Bedside, complete with Coolidge tube and table. Address 752, care of this office.

Wanted

Physicians would like desirable office rooms in association with established dentist. Address L. M. Lowe, M.D., 1800 Third Ave. So., Minneapolis.

Physician's Secretary at Liberty

Young lady with five years experience, wants position in doctor's office. Capable stenographer and bookkeeper. Address 753, care of this office.

Opening for Physician

North Dakota city of 600 is without physician. Located in North Central part of state. A good location with large trade territory. Address 751, care of this office.

Doctor, Attention!

Doctor, let us sell your practice, find suitable associate, assistant, location, or position for you. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

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Trained social worker would like position in Minneapolis doctor's office. Capable of doing bookkeeping and typing. Will accept full or part time work. Address 750, care of this office.

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Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

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Recent graduate of University of Minnesota desires to affiliate with older man doing major surgery. Ability, personality and appearance will satisfy the most critical. One year country experience. Address 748, care of this office.

Experienced Technician

Young woman, graduate of University of Minnesota, with practical experience in all laboratory work, would like to locate in doctor's office, clinic, or hospital laboratory in Twin Cities. Can do typing and bookkeeping. Good references. Address 747, care of this office.

Practice and House for Sale

Seven room house, modern in every respect, garage in connection, office furniture, steel instrument case, bookcases, skeleton in oak case, Thermolite and Hanova (Mercury) Violet-ray. Three lots on same block without cost. Practice, good will, and influence to get appointments in Life Insurance Company. Address 749, care of this office.

LIST OF PHYSICIANS LICENSED BY THE MINNESOTA STATE BOARD OF MEDICAL
EXAMINERS—APRIL, 1930

BY EXAMINATION

Name	School and Date of Graduation	Address
Auld, Irving	Northwestern, M.D., 1929	317 E. 5th St., Duluth, Minn.
Brown, Robert Whitcomb	Harvard, M.D., 1928	Mayo Clinic, Rochester, Minn.
Burkley, George Gregory	U. of Pittsburgh, M.D., 1928	Mayo Clinic, Rochester, Minn.
Caldwell, John Mars, Jr.	U. of Georgia, M.D., 1928	Mayo Clinic, Rochester, Minn.
Carlson, Hjalmar Edwin	U. of Minn., M.B., 1929	1038 Matilda St., St. Paul, Minn.
Castleton, Kenneth Bitner	U. of Pa., M.D., 1927	Mayo Clinic, Rochester, Minn.
Chor, Herman	U. of Maryland, M.D., 1928	Mayo Clinic, Rochester, Minn.
Espersen, R. Wayne	U. of Minn., M.B., 1929	251 Drake Road, Bend, Oregon
Grimes, Allen Evans, Jr.	Northwestern, M.D., 1928	Mayo Clinic, Rochester, Minn.
Happe, Lawrence John	Creighton, M.D., 1929	Marshall, Minn.
Herbert, Willis Leo	Creighton, M.D., 1929	Maynard, Minn.
Herbst, Kenneth Albert	U. of Minn., M.B., 1929	Hastings, Minn.
Holmstrom, Carle H.	U. of Minn., M.B., 1929	St. Mary's Hospital, Duluth, Minn.
Humphrey, Arthur Allan	Northwestern, M.D., 1929	Mayo Clinic, Rochester, Minn.
Johnanson, Waldemar G.	U. of Minn., M.B., 1930	627 E. Jessamine St., St. Paul, Minn.
Johnson, Arthur Bernhoff	U. of Minn., M.B., 1930	3606 Dupont Ave. N., Minneapolis
Johnson, Herbert Paul	U. of Minn., M.B., 1929	1604 Elliott Ave., Minneapolis, Minn.
Jordan, Lewis Stanley	Eclectic Med. Coll. M.D., 1926 Cincinnati, Ohio	Riverside San., Granite Falls, Minn.
Jorris, Edwin Hall	U. of Minn., M.B., 1929	St. Mary's Hospital, Duluth, Minn.
Knapp, Midland Elbert	U. of Minn., M.B. and M.D., 1929	1538 Hillside Ave. N., Minneapolis
Knight, Homer Holcomb	U. of Minn., M.B., 1929	General Hospital, Minneapolis, Minn.
Loucks, Milo M.	U. of Minn., M.B. and M.D., 1930	Pipestone, Minn.
Lynch, Francis W.	U. of Minn., M.B., 1929	University Hosp., Minneapolis, Minn.
McLane, Evelyn Gruhlke	Rush, M.D., 1930	Sleepy Eye, Minn.
Mark, Hilbert	U. of Minn., M.B., 1929; M.D., 1930	Akeley, Minn.
Messick, Joseph Marion	U. of Pa., M.D., 1928	Mayo Clinic, Rochester, Minn.
Murray, Robert Anthony	U. of Minn., M.B., 1929	St. Mary's Hospital, Duluth, Minn.
Olson, Clifford A.	U. of Minn., M.B., 1930	Swedish Hospital, Minneapolis, Minn.
Palmer, Bascom Willcox	Med. Coll. of S. Carolina, M.D., 1928	Miller Clinic, Hamm Bldg. St. Paul
Rademacher, Clyde J.	U. of Minn., M.B., 1929	Kimball, Minn.
Rice, Herbert R.	U. of Minn., M.B., 1929	3136 2nd Ave. S., Minneapolis, Minn.
Russell, Sidney Benteen	U. of Minn., M.B., 1929	St. Mary's Hospital, Minneapolis
Ryan, Joseph Maurice	St. Louis U. Sch. of Med., M.D., 1929	St. Paul Clinic, St. Paul, Minn.
Sharp, Jay Emerson	Ohio State U., M.D., 1925	302 Furlow Apt., Rochester, Minn.
Smisek, Elmer Albert	U. of Minn., M.B., 1929; M.D., 1930	957 Arcade St., St. Paul, Minn.
Spooner, Alexander Dwight	U. of Wis., M.D., 1928	Mayo Clinic, Rochester, Minn.
Stenberg, Sherman T.	U. of Minn., M.B., 1929	2228 Seabury Ave., Minneapolis, Minn.
Swedenburg, Paul A.	U. of Minn., M.B., 1930	901 E. River Road, Minneapolis
Tavener, John Lyle	Northwestern, M.B., 1929	Waseca, Minn.
Taylor, James E. C.	Ohio State U., M.D., 1928	610 8th Ave. S. W., Rochester, Minn.
Vogel, Howard A.	U. of Minn., M.B., 1930	New Ulm, Minn.
Wahlberg, Elmer Waldor	U. of Minn., M.B., 1929	Isle, Minn.

BY RECIPROCITY

Dierkes, Gustave J.	Creighton, M.D., 1917	Rollingstone, Minn.
Harmeier, John Watson	U. of Pittsburgh, M.D., 1928	Mayo Clinic, Rochester, Minn.
Hewitt, Edith Swartwout	Geo. Wash. U. Med. Sch., M.D., 1924	Mayo Clinic, Rochester, Minn.
Mork, Frank Edward	Creighton, M.D., 1929	803 Washington Ave. S. E., Mpls.
Ruffin, Willcox	U. of Va., M.D., 1925	Mayo Clinic, Rochester, Minn.

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Hazen, S. Frank	U. of Pa., M.D., 1925	Mayo Clinic, Rochester, Minn.
Patmos, Martin	U. of Mich., M.D., 1928	Mayo Clinic, Rochester, Minn.

LIST OF PHYSICIANS LICENSED BY THE MINNESOTA STATE BOARD OF MEDICAL EXAMINERS—JUNE, 1930

BY EXAMINATION

Name	School and Date of Graduation	Address
Benjamin, Edwin Grimshaw	U. of Minn., M.B., 1930	1727 Med. Arts Bldg., Minneapolis
Bennett, Richard Jacques, Jr.	Temple Univ., M.D., 1927	Ancker Hospital, St. Paul, Minn.
Borgerson, Murly Angus	U. of Minn., M.B., 1930	N.P.B.A. Hospital, 1515 Charles St., St. Paul, Minn.
Carlson, Leonard Telford	U. of Minn., M.B., 1930	510 Oliver Ave. N., Minneapolis
Conlin, Leo James	U. of Minn., M.B., 1930	St. Mary's Hospital, St. Louis, Mo.
Crossland, Paul Marion	U. of Minn., M.B., 1930	329 Union St. S. E., Minneapolis
Dalton, Burr	U. of Minn., M.B., 1930	312 Harvard St. S. E., Minneapolis
DeCourcy, Donald Michael	Marquette, M.D., 1930	717 Conway St., St. Paul, Minn.
Dewey, Earle Thomas	U. of Minn., M.B. and M.D., 1928	City and County Hosp., San Francisco
Duncan, James Wallace	Rush, M.D., 1930	1919 5th Ave. S., Moorhead, Minn.
Ekblad, Gordon Harold	U. of Minn., M.B., 1930	1109 Churchill Ave., St. Paul, Minn.
Fritsche, Theodore Roosevelt	U. of Minn., M.B., 1930	New Ulm, Minn.
Galinson, Sam	U. of Minn., M.B., 1930	Jewish Hospital, St. Louis, Mo.
Garrow, Douglas Moore	U. of Minn., M.B., 1930	1315 Goodrich Ave., St. Paul, Minn.
Goehl, Reinhold O.	U. of Minn., M.B., 1930	La Moure, N. D.
Goodman, Max John	U. of Minn., M.B., 1930	911 Newton Ave. N., Minneapolis
Graham, William Donald	U. of Minn., M.B., 1930	664 Conway St., St. Paul, Minn.
Greenberg, Morris	U. of Minn., M.B., 1930	Ancker Hospital, St. Paul, Minn.
Halpin, Joseph Ephraim	Marquette, M.D., 1930	St. Joseph's Hospital, St. Paul, Minn.
Hamm, Frank Coleman	U. of Mich., M.D., 1925	Mayo Clinic, Rochester, Minn.
Hargreaves, Robert Paul	U. of Minn., M.B., 1930	2328 Alden St., St. Paul, Minn.
Hedin, Raymond Freeman	U. of Minn., M.B., 1930	339 Sydney St., St. Paul, Minn.
Helseth, Hovald Kjoss	U. of Minn., M.B., 1929; M.D., 1930	Appleton, Minn.
Hennessy, Harold Richard	U. of Minn., M.B., 1930	1414 S. Hope St., Los Angeles, Calif.
Hershkowitz, Saul Theodore	U. of Minn., M.B., 1929; M.D., 1930	939 Grand Ave., St. Paul, Minn.
Horn, Carl Edward	U. of Minn., M.B., 1930	217 E. Cherry St., Mankato, Minn.
Howard, Elna Miriam	U. of Minn., M.B., 1929; M.D., 1930	1949 Hayes St. N. E., Minneapolis
Johnson, Catherine Welch	U. of Minn., M.B., 1930	1526 A St. N. E., Washington, D. C.
Kirklin, Oren Leslie	Ind. Univ. Sch. of Med., M.D., 1928	Apt. D 3, Coll. Apts., Rochester, Minn.
Larson, Paul Nordland	U. of Minn., M.B., 1930	2610 Polk St. N. E., Minneapolis
Medelman, John Paul	Rush, M.D., 1930	1953 Medical Arts Bldg., Minneapolis
Mookerjee, Marcus Kellogg	U. of Minn., M.B., 1930	Miller Hospital, St. Paul, Minn.
Morris, Richard Edward	U. of Minn., M.B., 1929; M.D., 1930	St. Luke's Hospital, St. Paul, Minn.
Ninneman, Newton Noah	U. of Minn., M.B., 1929; M.D., 1930	604 Besse Bldg., Minneapolis, Minn.
Olson, Archibald Oscar	Rush, M.D., 1930	Hendricks, Minn.
Peterson, David Berger	U. of Minn., M.B., 1930	588 York St., St. Paul, Minn.
Petraborg, Harvey Theodore	U. of Minn., M.B., 1929; M.D., 1930	Stillwater, Minn.
Rodgers, Richard S.	U. of Minn., M.B., 1930	3645 Park Ave., Minneapolis, Minn.
Rufe, Redding Henry	U. of Minn., M.B. and M.D., 1928	927 Fulton St. S. E., Minneapolis
Salter, Reginald Arnold	McGill, M.D., 1926	317 Union St. S. E., Minneapolis
Schoffman, William Francis	U. of Minn., M.B., 1929; M.D., 1930	Abbott Hospital, Minneapolis, Minn.
Schunk, Peter Monte	Rush, M.D., 1929	Mayo Clinic, Rochester, Minn.
Sherman, Royal V.	U. of Minn., M.B., 1930	1821 Goodrich Ave., St. Paul, Minn.
Starkey, Thomas Austin	U. of Minn., M.B., 1930	1011 Ashland Ave., St. Paul, Minn.
Tovell, Ralph Moore	Queens Univ., M.D., 1926	Mayo Clinic, Rochester, Minn.
Trommald, Gladys B. K.	U. of Minn., M.B., 1929; M.D., 1930	502 N. 7th St., Brainerd, Minn.
Tyvand, Raymond Eugene	Rush, M.D., 1929	Mayo Clinic, Rochester, Minn.
Weiler, Kenneth	Northwestern, M.D., 1929	Hastings, Minn.
Westman, Ragnar Theophile	U. of Minn., M.B., 1930	102 17th St., Cloquet, Minn.

BY RECIPROCITY

Beaver, Donald Charles	Detroit Coll. of Med., M.B., 1926; M.D., 1927	Mayo Clinic, Rochester, Minn.
Hartfiel, Herbert Arthur	U. Louisville Sch. Med., M.D., 1928	1019 Wakefield Ave., St. Paul, Minn.

NATIONAL BOARD CERTIFICATION

Wakefield, Elmer Glenn	Johns Hopkins, M.D., 1925	Mayo Clinic, Rochester, Minn.
Wilson, John Allen	Rush, M.D., 1929	1210 Lowry Med. Arts Bldg., St. Paul

THE JOURNAL-~~L~~ LANCET

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RELATIONSHIP OF HIGH FAT DIETS TO THE DEVELOPMENT OF ARTERIOSCLEROSIS IN DIABETES*

BY ARCHIE H. BEARD, M.D.

MINNEAPOLIS, MINNESOTA

This is only an attempt to review impartially the opinions of the various men over the country. We feel that there is considerable argument as to the relationship of high fat diets to the development of arteriosclerosis in diabetes, and there are many things that have to be considered very seriously on both sides.

The idea that arteriosclerosis in diabetes is due to high fat diets has been developed by Joslin more than by any other man. He has had two ideas in mind. First, he is making a plea for a longer span of life in diabetes, which today is our next step for these cases. The second idea in Joslin's mind, I feel, is that research work and statistics have shown to his own satisfaction that high fat diets are etiological factors in the development of arteriosclerosis for both the non- and true diabetic individual.

We all realize today that our cases of diabetes are not dying as formerly of coma. Before the days of iletin, between sixty to eighty per cent of all our cases died usually in the first year of the disease of acidosis. Today most of our deaths are due to some cardiovascular complication. Joslin states that from 1923 to 1928 forty-one

per cent of his total deaths at the New England Deaconess Hospital could be traced to some form of cardiovascular disease. Seventy-one per cent showed arteriosclerosis to more or less degree at the time of their death. He feels there should be more care in the prevention of this condition if we are to lengthen the span of life for these cases.

His second idea, that arteriosclerosis in diabetes is due to the high fat diets used during the last five to six years, is an attempt toward prevention rather than cure of this condition. We all realize that in time arteriosclerosis is the greatest cause of death in all classes, and for that reason Joslin has turned to the great amount of statistical study available on arteriosclerosis to build up his theory, using certain facts that are present in diabetic literature to strengthen it.

In 1925, eighty-four per cent of all the diabetic deaths in Massachusetts were patients over fifty years of age. He states that in the Naunyn period the reason we had so few vascular complications was that patients did not live long enough to develop arteriosclerosis, since in that period their average span of life was four and seven tenths years. However, the literature

*Read before the Minneapolis Clinical Club, March 20, 1930.

rarely mentioned diabetic arteriosclerosis, for our greatest enemy, acidosis, reached the individual before arteriosclerosis had a chance to develop. In the Allen period, the average span of life was five and four tenths years, and today in the Banting period it has increased to seven and seven tenths years, with many diabetic patients today living after having contracted the disease ten years previously. In other words, the diabetic, with the rest of us, is growing old. Joslin's statistics show that formerly sixty-one per cent of the deaths were caused by coma, while today it has decreased to twenty per cent. Formerly fifteen per cent in the Naunyn period died of arteriosclerosis; today it has increased to forty-seven per cent.

Joslin has developed his plea from two sources: first, the autopsy material; and second, the x-ray pictures of the peripheral arteries showing arteriosclerosis in living diabetic patients.

His post-mortem material is based on thirty-three autopsies on patients who had had diabetes for more than five years, seventy per cent showing arteriosclerosis. He has for comparison a series of nineteen cases with a duration of less than five years, in which arteriosclerosis was the cause of death in eighteen per cent. In going over his material, he demonstrates that only in patients in the first decade of life was there no evidence of arteriosclerosis as the cause of death.

Incidence of arteriosclerosis and its presence as a cause of death in 52 autopsies upon diabetic patients, according to age of onset of diabetes.

Decade of Onset Years	Total Cases	Arteriosclerosis	
		Incidence Per Cent	Cause of Death Per Cent
0-9	4	0	0
10-19	5	20	0
20-29	7	59	29
30-39	6	100	50
40-49	7	100	0
50-59	11	100	45
60-69	13	100	70

At the same time he presents the following table as evidence of arteriosclerosis and cause of death according to duration of diabetes in the same series:

Incidence of arteriosclerosis and its presence as a cause of death in 52 autopsies upon diabetic patients, according to duration of diabetes.

Duration of Diabetes Years	Total Cases	Arteriosclerosis	
		Incidence Per Cent	Cause of Death Per Cent
0-4	33	70	18
5-9	7	100	71
10-14	7	100	71
15-19	2	100	50
20	3	100	67

Joslin brings a special case to mention in a boy whose diabetes began at ten and one half years, who died five and one half years later, and showed at autopsy atheromatous plaques in his aorta which could not be ascribed to puberty. All this material was based on the autopsy reports by Warren and Root. Together or alone these two men have written four articles. The main facts they brought out are as follows:

1. The pancreatic islands showed various states from hyalinization to lymphocytic infiltration, and sclerosis, but in each case normal islands were present. They felt that in the treated cases there were more normal islands than in the dietary treated cases.

2. They felt the islands showed evidence of a toxic origin or an injurious agent which to them accounted for transitory glycosuria in acute infections, as lobar pneumonia and diphtheria, and permanent glycosuria when the injurious agent was not removed. Thereby islands attempting to regenerate were later replaced by scar tissue if the toxic agent continued to insult the cells over years. Eventually the destructive process wears down the regenerative power of the pancreas. Numerous cases showed mitotic figures.

3. All the cases over forty years of age, of which there were seventeen, showed arteriosclerosis of varying degree. This was demonstrated by arteriosclerosis in the aorta, brain, peripheral vessels, and coronary arteries. Seven of the cases died of angina, and at autopsy three others had healed infarcts in the left ventricle. Of the twenty-one cases over twenty-five years of age, six had gall stones and a seventh had cholecystitis. This fact is brought out later as a causal relationship to arteriosclerosis as being due to the cholesterol content of the blood.

4. Warren and Root bring out lastly the high percentage of obesity that is present in this series of autopsies at some time in the life of the patient. They feel this is a definite influence on the arteriosclerosis due to the increased blood lipoids, and that the cholesterol deposits in vascular disease and cholelithiasis go hand in hand.

Joslin then reviews other autopsy material. He mentions Wilder's incidence of arteriosclerosis in the coronary vessels. Wilder had eighty-one fatal cases with fifty-eight autopsies. He attributed ten deaths as due to diabetes alone, the remainder to degenerative complications or results of operation. Wilder agrees there was arteriosclerosis of more or less degree in all cases over forty years of age. Joslin brings out, from Wilder's autopsy material, the lack of parallelism between the lesion found in the pancreas and the intensity of clinical symptoms. This covers all the data presented from autopsy material.

Now what material have we from the living cases to advance Joslin's theory? Here we turn to the x-ray data presented by his roentgenologists, L. B. Morrison and L. D. Boyer, who have shown that they can find arteriosclerotic vessels in thirty per cent of their diabetics when their disease began between the 20-29 years; in forty-five per cent who develop diabetes between 30-39 years; and in nearly one hundred per cent who develop diabetes at forty years of age. He gives the following table:

Decade	Cases	Per Cent of Arteriosclerosis
0-9	40	0
10-19	52	4
20-29	20	30
30-39	38	45
40-49	48	77
50-59	79	85
60-69	37	81
70-79	10	100

Total 324 Average 52 per cent

Also we will find the following per cent having arteriosclerosis in five year periods:

First five years of the disease	50 per cent
Second five years of the disease	56 per cent
Third five years of the disease	83 per cent
Fourth five years of the disease	92 per cent

Joslin also presents x-ray material reported by Labbe and Lenfautin and also by Bower at the Buffalo General Hospital which correlates the work of Morrison, but gives nothing new in the way of statistics.

We all know the mildness of diabetes in the Jewish race, and Joslin shows, of his one hundred and forty-three cases, sixty-four per cent died in the Naunyn period, thirty-eight per cent in the Allen period, and eleven per cent in the Banting period, of acidosis. He states arteriosclerosis was responsible for all the noncoma

deaths in the Naunyn epoch, or thirty-six per cent; in the Allen period, twenty-five per cent; and in the Banting period, sixty-one per cent. Of the forty-three deaths in the Banting period, nineteen per cent were due to lesion of the brain, forty-four per cent due to lesion of the heart, sixteen per cent to lesion of the extremities, and twenty-one per cent to lesion of the kidney.

With this post-mortem review and x-ray statistic of arteriosclerosis of the vessels, Joslin next attempts to explain these figures on the diets used during these periods. He takes up the three food factors, carbohydrate, protein, and fats, and then acidosis and alcohol in a superficial way.

THE ETIOLOGY OF ARTERIOSCLEROSIS IN DIABETES

1. Protein he reviews very quickly. He assumes, as the past literature on arteriosclerosis has done, that a high protein diet is harmful. This question has had its friends and enemies, but he apparently is one of its enemies and leaves the question as generally held, that high protein diets increase arteriosclerosis in both the true and nondiabetic patients. As a review, he states our progress in the last 100 years in the treatment of diabetes, as being one where formerly only a low carbohydrate diet was allowed and proteins and fats were unrestricted, to our present day conception of protein ingestion. He brings forward his early idea of one gram of protein, and then states Petró and Newburgh's coöperation in throwing their influence to a low protein intake in high fat diets. Therefore, he assumes all agree that for one reason or another a low protein diet is best in not allowing arteriosclerosis to occur in the nondiabetic as well as in the diabetic individual. Of course, the question of the glucose forming element must be considered as a factor.

2. Carbohydrates, as a factor in the development in arteriosclerosis, he decided immediately. He says it is only if we allow the predisposing condition of obesity to occur. Otherwise, there is little opportunity for it to be a factor. He feels that persistent hyperglycemia might be a factor, but realizes that in children and young adults it cannot be present over a long enough period of time to develop arteriosclerosis without coma first taking away the individual. He feels that a persistent hyperglycemia of 0.25 per cent is not harmful, unless sugar is present in the urine. However elementary this fact may be, I think that we can all agree that carbohydrates have little basis for suspicion.

3. Alcohol he feels might be a factor, but

he states very few diabetics use it in this country. They all prefer more carbohydrates in contrast to alcohol for their periods of debauch.

4. Acidosis has to be considered as a possible cause of arteriosclerosis. Of course, acidosis due to improper carbohydrate régime does not allow enough time for arteriosclerosis to occur. In the future, the ketogenic diet as advocated by Lennox in the treatment of epilepsy may give us some information on this question.

5. This, of course, only leaves fat as a possible cause of arteriosclerosis. Here Joslin turns to the work of Virchow who found fat in the intima of the larger arteries, and therefore concluded that the fat in the form of cholesterol esters was deposited in the intima. Virchow states that the more fat there was in the blood stream the more cholesterol would be deposited in the blood vessels. Virchow said he did not find carbohydrate, protein, and acids present. Aschoff agrees with this view.

Of course, this brings us up to the question of obesity. Joslin is very decided on this point. He feels it is one of our greatest causes of diabetes in adult life. Joslin feels that under nutrition should be encouraged and that the work of Petré, Newburgh, and Marsh is setting the stage for hyperglycemia and excessive fat in the blood. He also feels that patients dislike high fat diets over a long period of time. Joslin, however, states that Petré rarely used over forty grams of carbohydrate, and also used exclusive fat diets on certain days. We all realize that acidosis might increase or decrease depending upon the amount of glucose reserve present in the body for oxidation at that time. Therefore, the great factor to be considered in the high fat diet is the amount of carbohydrate and glucose available for the complete combustion of the fat. This he feels is explained again by the omission of iletin at times, allowing coma to develop when fats are only broken down into the fatty acid radicals. This occurs in both the high fat diets and endogenous fats in the body in cases of vomiting and hyperthyroidism. As he states, a high fat diet may not lead to acidosis in a mild case, but in a severe case it leads to an accumulation of incompletely oxidized fat in the blood, with ketone bodies and death from coma.

Joslin now states that a low blood fat rarely occurred in any severe type of diabetes before the day of iletin treatment. He shows the statistics of Horace Gray who demonstrated that eighty-six per cent of his patients died in less

than two years if the blood fat was over two grams per 100 c.c. of blood. Gray shows that only those with a relatively low fat diet live for years. Gray also shows that the cholesterol runs hand in hand with the blood fat. In 1914 their severe cases with marked undernutrition showed blood fats forty per cent higher than the obese diabetics or mild cases. Unfortunately, at this time x-ray pictures were not taken for atherosclerotic vessels. Gray feels that the severity of the diabetes runs parallel with the acidosis and the blood fats present. Cowie and Hoag found the blood fat increased unless the diabetes was under control.

Cholesterol, one of the substances associated with the blood fat, is increased in the diabetic blood, and as stated above, has a bad prognostic significance. Just what happens to cholesterol in even normal diets is not known, but it is probably synthesized in the body. Labbe and Heitz found cholesterol increased in the blood of diabetics and also in twenty-seven cases of endarteritis obliterans. Windaus also found cholesterol increased in the aorta and feels this may help confirm the theory of Virchow and Aschoff.

In order to support his theory better, Joslin has tried to associate the presence of gallstones in diabetic individuals with the same theory. He turns to Jones in his report of hepatic and pancreatic activity in diabetes. Jones was able to diagnose eleven of sixty-eight cases of diabetes as having gallstones using the duodenal sediment test before x-ray or operation. Jones feels that one fifth of all the cases under forty years of age and obese will have gallstones and gall bladder disease. Joslin also presents Mentzer's report from the Mayo Clinic in which twenty-one per cent of six hundred consecutive cases had gallstones, and ninety per cent of these patients, weighing over 220 pounds, had gall bladder disease in contrast to thirty per cent weighing only 110 pounds. Mentzer also found a relatively high per cent of these cases showed an increase of blood cholesterol. Dewey produced gallstones in animals by feeding excessive amounts of fat. Hypercholesteremia in association with gallstones has also been observed by Wilensky and Rothchilds. Also in xanthoma diabeticorum, Goldstein and Harris found a high cholesterol content in the blood. Here also we have a disturbance in the metabolism of fats. As stated above, Root and Warren commented on the presence of coronary disease in their cases of diabetes in which gallstones were found. Warfield has reported on the association of ar-

teriosclerosis in nephrosis in those cases in which cholesterol is high.

In ending, he pleads for his treatment as more rational, in contrast to Sansum who has given high carbohydrates and high insulin therapy, feeling that a gradual increase of both gives less damage to the pancreas. He does not plead for a cholesterol free diet, but thinks that by giving a higher amount of carbohydrate, the fats can be more easily burned. In this way the patient can receive approximately the same number of calories and in the end not allow the high blood fat to develop.

Time only will tell, by watching the diabetic for arterial changes in the vessels of the eye, the electrocardiograph for changes in the myocardium and coronary vessels, and lastly, the feet by x-ray of the vessels in the young as well as in the old. In the end we should remember that diabetes itself is relatively a degenerative disease, and whatever may cause the diabetes may cause the arteriosclerosis. Wilder and Marsh are not in favor of the theory, and both continue to use relatively high fat diets, not allowing the patient to become obese.

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DISCUSSION

DR. B. J. CLAWSON (Minneapolis): This paper is very interesting, bringing up the etiology of arteriosclerosis, which is certainly to the point. Joslin's idea agrees with that of Aschoff concerning the pathogenesis of arteriosclerosis. He thinks arteriosclerosis is due to a condition in the blood rather

than a condition in the arteries primarily. The increase in the lipid content is a factor in the production of arteriosclerosis. There is no doubt about the high incidence of arteriosclerosis associated with diabetes. It does not occur in adults only. We find it also in younger people. There are different ways of looking at the relation of diabetes to arteriosclerosis. Does the arteriosclerosis produce the diabetes, or does the diabetes produce the arteriosclerosis? In younger people we see an increase in diabetes developing, and the incidence of arteriosclerosis is certainly very high. I remember a case of arteriosclerosis in a young man who had had diabetes for some time that had been controlled by diet and insulin, who died of coronary sclerosis. On the other hand we have old people with mild diabetes who have had hypertension, and marked arteriosclerosis in the pancreas. It is a question as to whether it is a cause or result of this condition. Another point brought up is the significance of arteriosclerosis in the radials. We may have a very severe coronary sclerosis, without any marked sclerosis at all of the peripheral vessels. They don't seem to go together.

DR. MOSES BARRON (Minneapolis): I agree with Dr. Joslin that arteriosclerosis is much more common in diabetics than in nondiabetics. I do not think, however, that Joslin has proved his point that it is the high fat diet which is responsible for this condition. I would like to see Joslin continue his interesting work in statistical research comparing the results obtained as far as arteriosclerosis is concerned among the different leaders in the diabetic field. Take, for instance, Sansum, in California. He uses very large amounts of carbohydrates together with a very high dosage of insulin and a relatively low fat content. Newberg and Marsh, in Michigan, use relatively high fat diet, while Joslin and his school uses intermediate amounts. It would be interesting to have the relative diets compared noting the difference in the incidence of arteriosclerosis with different types of diets.

I think that some condition associated with diabetes other than the diet is responsible for the arteriosclerosis. As to the question whether arteriosclerosis produces the diabetes or vice versa, I remember that some years ago I pointed out the frequent association between coronary disease and mild diabetes. At that time I attributed the relationship to the idea that the arteriosclerosis was the basis for the coronary disease as well as for the diabetes, and that some common factor produced the arteriosclerosis. I still feel that there is something to that. I would like to see Joslin throw some light on this subject.

DR. J. M. LAJOIE (Minneapolis): I have had two patients, elderly of course, with mild diabetes, for a number of years, and both of these patients died of angina pectoris; both had gall bladder disease, one had a large gallstone in the gall bladder. We did not tell the patient this, since we did not believe it would be advisable to remove it. As Dr. Beard was going over the classification and causes, it occurred to me that perhaps the arteriosclerosis was present before the diabetes, I mean in a mild degree. I wonder if Dr. Clawson could tell us about

this. Is arteriosclerosis present in varying degrees, or when there is no arteriosclerosis in other areas may there still be some in the pancreas of a diabetic?

DR. BEARD (closing): Dr. Joslin, through the aid of some friends, is attempting to continue his work on statistics, especially the work of Newburgh and Marsh, and the work at his own institution in Boston. It will be well worth while, and we look forward with a great deal of interest to the results. Joslin is the only man in the country who has made a statistical study in diabetes. At the University we are attempting to do the same thing, by taking x-rays of the extremities of all diabetic patients, also electrocardiographs, and on all patients under

40 years chest plates are taken to see if they develop tuberculosis more readily than nondiabetics.

Of course, we realize that the longer a patient lives, the more apt he is to die of some other disease. Joslin believes that diabetes rather burns itself out over a period of years, and Wilder brings up the point as to whether or not insulin may not be made in some other place in the body besides the pancreas. We know that it is produced in some plants, also found in yeast, and possibly after a patient has had diabetes for a number of years, insulin may be produced in the muscles, or other parts of the body. So that insulin may not be the whole factor mixed up in diabetes. There may be some other factor we don't know about.

THE TANNIC ACID TREATMENT OF CUTANEOUS BURNS*

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The last five years have witnessed a revolution in the treatment of cutaneous burns, more especially as regards their treatment with local applications. Whereas, formerly, many varied applications of as many varied hues and consistencies were used for this purpose, the modern accepted treatment of the use of tannic acid, as first brought out by Davidson, in 1925, has relegated them all to the past, and, itself, become a real advance in such cases.

The possibility of limiting absorption by a coagulum or precipitation of devitalized tissue was suggested to Davidson by the observation of Pfeiffer, who discovered that the toxic extract of burned skin was precipitated, *in vitro*, by bichloride of mercury acid solution and by phosphotungstic acid.

It was while he was investigating the possibility of using phosphotungstic acid as a coagulant in these burn cases that he was advised by E. C. Mason of the similarity of tannic acid and phosphotungstic acid as regards the property of precipitating proteins. Upon investigation he found tannic acid to be non-nitrogenous amorphous powder readily soluble in water, glycerine or alcohol, but insoluble in chloroform or ether; also that it precipitated proteins, alkaloids, some glucosides and salts of heavy metals and that it forms a more or less stable compound with the protein constituents of the body fluids and cells.

The treatment with tannic acid is based mainly on the assumption that there is formed a toxic substance at the site of the cutaneous burn, which substance is responsible for the constitutional or toxic reaction. Bardeen, Robertson and Boyd have made studies and demonstrated conclusively the existence of such toxins in the blood following extreme burns. When tannic acid is applied to a burned surface in dilute solution, Davidson believes further penetration of toxins into the deeper lying protoplasm is prevented by its precipitating action, and that the true astringent effect appears to be limited exclusively to the most superficial layers of tissue. The precipitated proteins in the treated surface thus provide a protective coating or coagulum against chemical bacterial and mechanical action, as well as against sensory and inflammatory irritation. It was as a result of these considerations of the properties of tannic acid, and especially in that, that it might be efficacious in precipitating the toxic materials in burned tissues and thus preventing their absorption that the present treatment was first undertaken. The application of tannic acid to the burned skin surface thus produces a coagulum of the devitalized tissues and renders the products of the burn insoluble so that no absorption takes place into the general circulation.

This coagulum or crust forms a covering over each burnt area, but does not affect or adhere

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to the normal skin. In appearance it resembles pieces of smooth leather. It becomes practically waterproof, rigid, and thus lessens the loss of body fluids from the raw surfaces, and forms an unfavorable nidus for bacterial growth. The prevention of the loss of tissue fluids naturally leads to a saving of blood chlorides.

Method of application: Tannic acid is most useful in a 5 per cent solution. It may be used in a 10 per cent solution, although I personally use a 5 per cent solution and find it most satisfactory. It is essential that the solution be freshly prepared, just prior to its use, because it deteriorates on standing with a resulting formation of gallic acid. Aqueous solutions only are used and recommended. The solution is readily prepared by using one-half teaspoonful of the powder in one ounce of water, forming a five per cent solution. When thus prepared it is placed in an ordinary clean nose and throat atomizer and sprayed over the burnt skin surfaces of the body. Spraying is renewed every 15 to 30 minutes for the first twenty-four hours, and later every hour. In 48 to 72 hours, if properly carried out, crusts will be well formed, covering the sprayed burnt skin areas. The



Case, showing appearance of tannic acid coagulum over burnt area.

patient should be placed in bed, preferably on sterile sheets and without clothing. Any necessary splints or suspension apparatuses for the limbs are now applied, for the prevention of contractures. In some cases it becomes necessary to tie the hands or feet, or both, of children who persist in rolling about or in touching burned areas. Blankets or sterile sheets are placed so as to form a tent over the bed, and electric lights suspended from the roof of the tent to assist in drying out the tannic acid and keeping the patient warm. In 48 to 72 hours a definite dry brown, later a black crust or co-

agulum forms a covering, as previously mentioned, smooth in appearance and leather like, over the burnt area, seals the wound, under which sepsis is not likely to occur, and is itself insensitive. All blisters are opened, under sterile conditions as soon as formed and sprayed with the same solution. No wet dressings should ever be applied over the coagulum or crust. The advantages of the coagulum formation are a very noticeable and markedly less degree of toxemia, as evidenced by the clinical behavior of the patient, relatively low temperature curves, slighter degree of blood concentration, comparatively low levels of the non-protein nitrogen of the blood maintenance, analgesia, and lower mortality rates from primary toxemia. Application of tannic acid is painless. No exhaustion or painful dressings are necessary. Extensive burns can well be coagulated in from 24 to 72 hours. Healing progresses undisturbed beneath the covering formed and the injury and infection of the granulation avoided. Scars and contractures are less pronounced. Once the coagulum is formed no further local treatment is required. The coagulum should not be loosened or taken off, except as it peels off itself, or when it loosens itself at the edges, as epithelization underneath begins and progresses. The loose portions of coagulum may then be cut away with scissors. In deep burns, the coagulum will usually loosen in from two to three weeks, leaving a healed or clean granulating surface, which can be prepared for skin grafting. Davidson recommends early skin grafting, when found necessary. If sepsis intervenes, no wet dressings should be applied on coagulum. Davidson believes applications of solutions such as boric acid usually lead to a rise in temperature and symptoms of toxemia. Should sepsis occur, the coagulum must be completely removed before any form of moist dressings is applied. The tannic acid method is not so applicable to burns previously treated for longer period than of 72 hours. Once toxemia has occurred through absorption, tannic acid application is powerless. To secure the best results, treatment with tannic acid should be given immediately following the burn. Thus far I have purposely refrained from mentioning anything of the treatment of severe cases of burns in so far as relates to their general treatment. As every physician knows, shock must be effectively combated and given first and immediate attention. Morphine in doses sufficient to quiet pain must be administered at once. Body heat must be maintained and fluid forced orally, hypodermatically, in-

travenously or by proctoclysis. Transfusion of blood is frequently found necessary. The urinary output must be carefully watched and a fluid balance maintained. Beedman believes that burned cases should be given one liter of fluid in 24 hours for every 25 pounds of body weight and is in the habit of giving 5 per cent glucose hypodermatically. He reports that in a series of 434 cases of burns in children, mortality has been decreased from 28 per cent to 15 per cent and that the average hospital stay of patients was decreased six days by the tannic acid treatment method.

At the Minneapolis General Hospital where we see a great many of these cases we find burns most frequent among children. This is in common with findings of other hospitals and of general practice. It is obvious then that the treatment as I have here attempted to describe it has many advantages over any other thus far in

common use. To recapitulate, the tannic acid treatment of cutaneous burns has the following advantages.

1. Tannic acid is easily prepared.
2. It reduces toxemia.
3. It is a painless application.
4. It has an analgesic effect.
5. It reduces loss of body fluids.
6. It dispenses with frequent and painful change of dressings.
7. Healing is more rapid, thus lessening hospital stay.
8. Scars and contractures less pronounced.
9. Skin grafts become less frequent.
10. It reduces mortality rates.

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CASE REPORTS

By K. A. PHILIPS, M.D.

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TUMOR OF THE ESOPHAGUS

The patient, a woman, age 29, was admitted to the University Hospital, June 11, 1927, complaining of nausea, vomiting, heartburn, palpitation of the heart, and alternating diarrhea and constipation of three months duration. The nausea was nearly constant, vomiting rare. One year before she had tarry stools and was treated for ulcers, though no x-ray diagnosis had been made. She felt weak, appetite good, distress in epigastrium with pain which radiated to both axillae, accompanied by nausea. She was very nervous and excitable. X-ray of chest and esophagus negative. Basal metabolism rate plus 25. A diagnosis of hyperthyroidism was made. She was treated by x-ray, and the basal metabolic rate dropped to minus 1. Weight improved from 102 pounds to 117 pounds, and she was discharged from the hospital.

Readmitted to hospital November 15, 1928. She was sent in for pressure symptoms produced by goiter. These were present for one month. She complained of pain in the back of her neck and headaches. X-ray of the esophagus was again negative. Diagnosis of esophageal spasm was made. There was no hyperthyroidism at this time. She returned to her home town and in May, 1929, she began to have dysphagia. The local doctor passed the stomach tube and on withdrawal it was covered with bright red blood. Difficulty in swallowing increased

until August when she had complete obstruction. She lost weight and complained of pressure in chest. Fluoroscopic examination showed obstruction of esophagus. Esophagoscopy showed a sloughing, bleeding mass thirty centimeters from the incisor teeth. (X-rays shown.) You can see well below the clavicle there is a filling defect. There was almost a complete obstruction, and Dr. O. J. Campbell did a gastrostomy on her, and she did fairly well. A piece of the tumor was sent to Dr. Bell, and a diagnosis of sarcoma was made. She was sent to the University for x-ray and radium treatment without any improvement. Death was caused by respiratory obstruction.

At postmortem a very interesting situation showed up. This tumor was a rather circumscribed mass, as you can see here, the larynx being just in front of the growth. There were no metastases. We had, then, a sarcoma of the upper third of the esophagus which could have been removed if we had had nerve enough to go after it.

Sarcoma of the esophagus is not very common, but I found one article published in 1923, in which the author had looked up all the cases on record, and found thirty-five, and of these he found most to be in men, in the lower part of the esophagus.

Progress of sarcoma of the esophagus is much more rapid than in cancer, and metastases are more seldom than in sarcomas elsewhere, and in his group 17 had no metastases.

The microscopic side of this tumor has been worked up at the Department of Pathology of the University of Minnesota.

MENINGITIS

Boy, age 20, came into the office February 4, 1930. He was very pale and looked sick. Said he was frail all his life. His left ear had been draining two weeks following a bad cold, and there was pain in this ear nearly constantly. The past few days the pain had let up and he was able to be out of bed, though he was able to sit at the table for his meals throughout his illness. He has had recurring attacks of ear discharge most of his life, about one attack a year.

Examination showed in the left ear a small perforation posterior to umbo. Drum bulging and pulsating, draining quite profusely. No mastoid tenderness. As the patient seemed sick no further examination was made. He was advised to have a myringotomy and he promised to return. I saw him next eleven days later.

February 13, severe pain in head. At twelve o'clock, noon, stuporous, drowsy, and cold, did not talk. At eleven, chill for one hour.

February 15, seen by family doctor at home. Delirious, temperature 102°, pulse 108, neck stiff. Chest and abdomen clear. Pupils react to light and accommodation. Sent to hospital. Temperature 103°. Unconscious. Dr. Hamilton made a diagnosis of meningitis. He called me and that afternoon a mastoid operation was done. W.B.C. 67,300.

Operation. Very thick cortex, no cellular structure left, bone sclerotic. Large antrum found full of pus under tension. Dural and sinus plates intact. Bridge and posterior canal wall taken down and attic opened. Ossicles not removed. Plastic on posterior canal wall. Pack through E.A.C. Wound tightly sutured.

February 16. Spinal irrigation by Dr. Hannah, cell count 4,667, no bacteria.

February 17. Spinal irrigation by Dr. Hannah; cell count 2,283, culture no growth.

First night restless, involuntaries, Cheyne-Stokes respiration at times. Temperature gradually lower and at 8 A. M. was 99.4°. Became semiconscious and asked time of day. By 3 P. M. rational and recognized family.

February 18. Headache and stiff neck less, no fever since operation.

February 22. Diplopia, right superior oblique paresis.

He left the hospital in fourteen days and now comes to the office for dressings, ear not dry. Diplopia gone, feels fine and gaining strength daily.

Discussion. The question comes up as to when we should do a complete radical mastoid operation, in the presence of an intracranial complication. There has been considerable discussion as to this, and the opinion has, as a rule, been accepted that in chronic mastoiditis, bone destruction does not occur without the presence of cholesteatoma, and its presence can be detected by finding a marginal perforation of the ear drum. In central perforation and no

cholesteatoma the simple mastoidectomy should suffice. My experience in these cases makes me think a radical operation probably is a little better treatment for any intracranial complication of a chronic otitis media.

DISCUSSION

DR. T. A. PEPPARD, (Minneapolis): In regard to Dr. Phelps' first case of meningitis, I want to remark about our experience at the General Hospital with three such cases, associated with suppuration in the middle ear. These cases all presented the clinical signs of meningitis, with fever, leukocytosis, spinal fluid cloudy, very thick and turbid, containing upwards of 25-30,000 cells per cubic millimeter. All of the cases responded very well to repeated spinal drainage. I remember especially one case had spinal drainage daily for a period of a month. The bacteriological examination of the spinal fluid showed a goodly number of pus cells. In the smears only scattering organisms could be found, and on culture no growth was obtained. All of the cases recovered with spinal drainage. Gradually the cell count became less until clear spinal fluid was obtained. I cannot report definitely, because I have forgotten about the surgical procedure in these cases, whether a radical or a simple procedure was followed.

DR. E. T. EVANS (Minneapolis): This may not have any definite relationship to the point under discussion, but in knee joint infections we frequently get a very high cell count with a negative culture, and the question arises whether these are true infections of the knee joint. I wonder just how much we can depend upon the cell count, without cultures or smears proving meningitis, when we find that other synovial fluids will run a high cell count without infection?

DR. PHELPS (closing): The cases of meningitis associated with middle ear disease that have no bacteria in the spinal fluid, are, of course, the ones that live. I believe anybody who was going to have a choice of meningitis would pick the one without bacteria if he could.

PSITTACOSIS

T. M. RIVERS, G. P. BERRY and C. P. ROADS, New York (*Journal A. M. A.*, Aug. 23, 1930), conclude from their studies that the virus of psittacosis is in the feces and in the material collected from the nose, mouth and procrop of infected parrots. Parrots and monkeys can be infected by intranasal instillations of the virus. Parrots and rabbits that have recovered from a primary infection are refractory to reinfection. It is not a simple matter to demonstrate neutralizing properties in convalescent human serum. In parrots and in mice, the principal lesions occur in the liver and spleen. Young monkeys (*Macacus rhesus*) are susceptible to intracerebral, intratracheal and intranasal inoculations of psittacosis virus. When it is instilled in the nose or injected in the trachea a characteristic pathologic picture occurs in the lungs which is similar to that observed in man.

THE LIFE OF WIDAL—AN HISTORICAL SKETCH

BY S. B. SOLHAUG, M.D.

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Georges Ferdinand Isidore Widal, whose name has become so closely associated with the agglutination reaction in the diagnosis of typhoid fever, was born March 9, 1862. He died January 14, 1929, aged 66 years and 10 months. Death was caused by cerebral hemorrhage occurring after an acute attack of gout of one week's duration.

His birth place was a little town of Algiers called Dellys, only a few of whose inhabitants are European. Both his father and his tutor planned for him a career in the laboratory and research field. Their enthusiasm and determination coupled with Widal's natural early aptitude along these lines raised him high above the level of his fellow students and gave him mastery of a branch of medicine which he was to aid greatly in developing, and later to desert, and yet without this training he would not have become the Widal of fame.

He received his medical education in Paris, taking his doctorate in 1889. Even during his undergraduate days he had begun to lean toward the clinical side of medicine, and in the year of receiving his doctorate, at the age of 27, published his treatise on "Puerperal Infection." From now on he was to build from the material of this, to him, new field, on the groundwork of previous training.

In 1895 he was made a professor in the Faculty of Medicine in Paris, a position he occupied until his death. The following year he became internationally known through the so-called Widal test for the diagnosis of typhoid fever. The association of his name with this test has been called an error. Discovery of the agglutinating action of typhoid serum and its application to the clinical diagnosis of typhoid fever was made in 1896, as the result of independent work by three men, H. E. Durham, Max Gruber of Vienna, and Widal, and it would appear that Gruber was the pioneer.

The first actual publication relative to this test was by Durham, in January, 1896, in which acknowledgement was made by the author to Gruber. Two papers on the same subject followed in March of the same year, by Gruber and Durham. In Durham's first paper attention was

called to the possibilities of the agglutination method for making the clinical diagnosis of typhoid fever. This phenomenon was demonstrated by Widal, six months later, on June 26, 1896.

There followed, then, a bitter controversy over priority, and in England at least the test is referred to merely as the agglutination reaction. In Germany it is known best as the Gruber-Widal test, and in France it has always been called the Widal test. Its introduction to America, incidentally, was made in the year of its discovery by Dr. Wyatt Johnston at the meeting of the American Public Health Association held at Buffalo, N. Y.

Following the development of the diagnosis and prevention of typhoid fever, especially after the discovery of typhoid vaccination, Widal achieved a reputation for original research which some writers state he scarcely merited. The proof advanced in support of this contention is found in the preëminence in their respective fields of the men associated with Widal in a wide variety of research. For example, associated with him in his work on the agglutination reaction were Nobécourt, Lesné, and Sicard; in the development of typhoid vaccination, Chanténisse; later on in the studies on sporotrichosis and actinomycosis, Abrami and Gougerot; then, in the researcher on the cytology of inflammation, Sicard and Ravant; next, in the investigation of hemolytic icterus, Abrami and Bruleé; and in the study of nephritis, Lemierre, Javal, Weill, Pasteur, and Ambard. Such is the indictment against Widal's reputation for originality and research.

Whether or not this charge be true, it nevertheless reveals Widal's genius for administration and leadership, without the need of further proof or elaboration.

Throughout all of the tremendous scope of Widal's activity, his clinical ability was outstanding, and his success as a physician is universally recognized. From the age of 27 the focus of his interest and effort was held by problems of clinical medicine, and it was only in the attempted solution of these that he reverted to the field of his earlier training. He would lose himself and all track of time on his

bedside rounds, and took the greatest delight in quizzing a history from his patients, and in making his physical examinations.

However, to Widal's immediate contemporaries at least, his chief claim to greatness lay in still another direction, for his colleagues and his students who alike overcrowded his classes and clinics, admired and valued most his teaching. And, again, it was the clinician who taught the practical side of medicine in a method so

clear and analytical, that he was acclaimed generally throughout the medical world as one of the greatest if not the greatest teacher of his day.

So we come to the conclusion that Ferdinand Widal's reputation for greatness rests not insecurely on any one achievement, priority for which may be questioned, but securely on his laboratory ability, on his genius for leadership, on his success in clinical practice, and on his crowning skill as a teacher.

THE LIFE OF ABRAHAM JACOBI*

BY L. F. RICHDORF, M.D.

MINNEAPOLIS, MINNESOTA

Abraham Jacobi was born May 6, 1830, this year being the centennial of his birth, near Minden in the neighboring village of Hartum in Westphalia. He attended the village school and later the gymnasium at Minden. Although his parents were of moderate means his father, being a Jewish shop keeper, the boy prepared himself for the university work at Greifswald.

His years at the University, 1847 to 1851, are years hard to forget in German history and also in medical history.

While at the University Jacobi became the associate of Karl Marx and Frederick Engels. He apparently met Carl Schurz in secret, to talk about the future of Germany, rising at that time on the wave of militarism. Lying diplomacy and imperialistic oppression were denounced passionately by these brilliant young men.

In the medical world Jacobi was surrounded by German professors, each brilliant, almost authoritative in their own branch of learning. Fundamental science was on the crest of the wave and men were eagerly pursuing work in research in anatomy (Haller), pathology (Vichow, Rokitsansky), and physiology (Du Bois Raymond). Then there was another group of men prominent among whom was Oppolzer, Bohemian clinician, whose ambition was to use these new scientific data in the fields of diagnosis and therapeutics. Oppolzer's words in

his inaugural address, on taking a chair in the University of Leipzig, in 1848, are the very words of the real practitioner of medicine today: "Those are greatly mistaken who believe that a modern physician is he who examines a patient most carefully, auscultates and percusses, and is satisfied when the autopsy corresponds with his diagnosis. Such a physician does not comprehend that the most sublime aim of all medical service is the healing of the sick." Through Jacobi's long life of medical practice these words must have been a real inspiration.

On the other hand where could one find teachers so thorough in fundamental science as those under whom Jacobi labored. Men to whom their work was everything; men who, in some instances, became egotistical and jealous of their great reputations. With new discoveries being made every day, there was a continual stimulation to young men to replace the old and nonprogressive. Necessarily then, only those could hold their places who were real leaders—at times, as today, such brilliant leaders that they despised "the common herd," who were little interested in their anatomy, embryology, pathology, physiology or chemistry. And so when Jacobi went to Göttingen to get pathological anatomy, Prof. Theodor Frerichs, then head of the department, questioned him briefly:

"What are you looking for in Göttingen?"

"Pathological anatomy."

"Nothing else?"

*Read January 28, 1930, before Lymanhurst Staff.

"Whatever is going, but there is no pathological anatomy in Greifswald."

"Alright, the laboratory will be open for you all day."

And there were others steeped in scientific endeavors. Some were only interested in their own field, with "the faith to move mountains." For example, Friedrich Wöhler, the chemist, trying to bring together organic and inorganic chemistry, hoping always to be able to construct more organic material. Others, like Conrad Heinrich Fuchs were interested in philosophy and metaphysics as well as in the specialty of dermatology. Then there was Rudolph Wagner, physiologist and embryologist, a very religious man; Langenbeck, professor of anatomy, surgery and ophthalmology, who had succeeded Haller, the great anatomist, surgeon, chemist, botanist and poet. A great conflict was going on between those scientists viewing the body as a mechanism and those who felt that this view was erroneous. Thus Jacobi became familiar with Lotze's theory of philosophic materialism in contrast to Schelling's *natur philosophie*, while he imbibed other knowledge from the professors at Göttingen. Apparently after two semesters at this university, the boy from Minden decided to go to Bonn. Some ascribe this to his dislike of the lectures of the clinician, Johann Conradi, who elicited unfailingly from every patient that they drank cold water before they became ill, and considered this to be a great cause of disease.

At Bonn he had several rare teachers, the surgeon Wutzer (Karl Wilhelm), who was one of the first to operate for vesicovaginal fistula, and the obstetrician Herman Friedrich Kilian. The latter has his name perpetuated in obstetrics—as Kilian's line and Kilian's pelvis, the first being the linea prominens of the promontory of the sacrum and the second the pelvis of osteomalacia. Then there was the vain Bischoff, professor of materia medica, whose three volumes Jacobi practically memorized before he dared to appear for examination, after a preliminary presentation with Bischoff's nephew, Carl Otto Weber. Two Webers, not related, were Jacobi's dearest friends at this time, Carl, noted above, and Herman Weber, then chief of the medical clinic of Professor Friedrich Nasse, at Bonn. Herman Weber later became an authority on tuberculosis and climatology in England and was knighted. Carl died a martyr to science when as a young professor of surgery in Heidelberg, while doing a tracheotomy on a

laryngeal diphtheria, death seeming imminent due to suffocation, he sucked the membrane out of the larynx and died later of diphtheria.

While at Bonn, under the teaching of Dr. Herman Weber, Jacobi was given Nasse's viewpoint of the stethoscope. Nasse had tried very hard to get the profession to see the stethoscope as an instrument whose use should be checked up by every means presented at operation or post-mortem. At the same time he urged young men to make use of this means of diagnosis. Jacobi developed into a competent clinician, but was imprisoned before he could begin to practice. And to add insult upon injury he was sent to the prison in Minden where he had attended the gymnasium. In 1853, after two years imprisonment, the authorities decided to release him with the plan of immediately re-arresting him on different charges. On the advice of his jailer he immediately left for England and renewed acquaintance with Dr. Herman Weber, then in England. He started practice in Manchester, but was not satisfied, so sailed for Boston. For 43 days on board a three masted boat he suffered the pangs of mal de mer, landing, according to Robinson, on a chill autumn morning, and hearing the American song classic of the day—"Can She Make a Cherry Pie, Billy Boy, Billy Boy." Thus Jacobi came to America, to Boston, where he stayed but a short time, to proceed to New York City, to Howard St. The sign "A. Jacobi, M.D.," became a landmark of New York in the next sixty years and typified the man in his straightforward, honest attitude toward medical science.

On coming to New York City Jacobi apparently saw the need of building up a practice. Within two weeks after he put up his sign he had his first patient who paid him a fee of 25 cents (1853). House fees at the time were twice that amount and five dollars was paid for a confinement. Dr. Jacobi realized about \$1,000 in his first year in practice.

In 1854, while attending a young man with luetic laryngeal involvement, Jacobi devised a crude laryngoscope. The following year Manuel Garcia studied laryngeal movements during singing with a similar instrument, and Jacobi realized that his crude apparatus might be brought forward as a claim to priority. However, he did not bother to do this, because of a certain dignity which was always characteristic of the man.

In 1857, through the friendship of Dr. Valentine Mott, Dr. Jacobi was admitted to the New

York Academy of Medicine. This academy furnished one of the greatest outlets of his life and made him thoroughly attached to America as his country and home. He came to know the greatest physicians in America. One of the grand practitioners of that date was John Wakefield Francis, with his cane, white neckerchief, and broad rimmed hat. One day Francis met Jacobi, and Francis being much older essayed to advise Jacobi. He said, "They speak well of you, only people want some outward show. Now I am an old man and you don't mind it if I say you ought to have another tailor. Jacobi answered, "You are an old doctor and famous and you can afford to wear old fashioned clothing of the eighteenth Brumaire and of the century of William Penn, but I cannot afford to get a better tailor." Other men with whom Jacobi came into contact were Horace Green, first of American laryngologists, who was criticized for twenty years because he originally passed a sponge tipped probang into the larynx and applied direct medication to the larynx. Also Joseph O'Dwyer, who made the first intubation set, who was accused by his confrères of torturing little children in the Foundling Hospital. The man from Minden began to understand how new ideas and inventions suffer in the fires of criticism. A compatriot of Germany, Emil Noeggerath, also a graduate of Bonn, collaborated with Jacobi in an article on obstetrics and pediatrics. But the man who was the dearest friend was Dr. Ernest Krackowizer, the Austrian exile who established a German hospital in New York. This most unselfish man, a well trained surgeon, well versed in pathology, died of typhoid fever at an early age, and Jacobi gave his memorial address at the New York Academy of Medicine. As years went by, as Robinson states, "Jacobi's leonine head became more and more familiar to the physicians of his adopted land," and his friendships grew with his human sympathy which expanded with the loss of his talented or poor friends.

His teaching career began early, at the age of twenty-seven years, when in 1857 he lectured to a few students in the college of physicians and surgeons on diseases of the larynx in children. In 1860, he became the professor of pediatrics in the New York Medical College, the first professor of pediatrics in America, and inaugurated the first medical bedside instruction in America. In 1865, he was given a chair in pediatrics at the New York University Medical College, and in 1870 the clinical chair at the College of Physicians and Surgeons of Columbia Uni-

versity, and although he attained world-wide recognition it took thirty years before he received his full professorship at Columbia University.

Jacobi's pupils include such men as Edward Livingstone Trudeau, Robert Abbé, first American to use radium; William Henry Welch, "Popsy" Welch of John Hopkins Hospital, to whom Jacobi referred as "my former student and my present master." Also William Stewart Halsted, famous surgeon; Henry Leopold Elsner, who wrote "Prognosis of Internal Diseases"; John Ridler, orthopedist of Chicago. Those that followed him in pediatrics were: Francis Huber, William Perry Northrup, Luther Emmett Holt, Henry Koplik, Henry Dwight Chapin, Henry Leber Coit, and Rowland Godfrey Freeman.

His history of American Pediatrics before 1800 included a resumé of early colonial writings on medical subjects—not all of these writings were by medical men, and apparently measles, smallpox, diphtheria and scarlet fever exacted tremendous toll of life and were often confused by the lay reporter.

Then Jacobi busied himself with other things, one of which was the agitation for the Surgeon General's Library and Catalogue. The director of the Library was John Shaw Billings, a friend of Jacobi. Jacobi worked with him to secure the appropriation for this venture from Congress.

As to his publications, William J. Robinson collected them in eight volumes of *Collectanea Jacobi*. Thus volumes I and II are labelled "Pediatrics," with titles as follows: Introductory Chapter to Keating's *Cyclopedia of Diseases of Children*, *Pediatrics and General Medicine*, *History of Pediatrics*, *History of Cerebrospinal Fever*, *Diphtheria*, *Croup*, *Cholera Infantum*, *Anemia*, *Otitis Media*, *Nephritis of the Newborn*, *Prevention of Tuberculosis*, *Epilepsy in the Young*, *General Therapeutics*, *Diseases of Organs of Circulation*, *Tuberculosis*, *Phthisis*, *Pulmonary Tuberculosis*, *Dentition*, *Diarrhea and Dysentery*, *Acute Rheumatism in Infancy*, *Laryngeal Involvement and Tabes Mesenterica*, *Causes of Infant Mortality*, etc.

Volume III. *Pediatrics, Clinical Lectures*, *American Pediatrics before 1800*, *Infant Hygiene*, *Rachitis*, *Heart and Blood Vessels in the Young*, *Progress in Infant Feeding*, *Milk Sugar in Infant Feeding*, *Cow's Milk and Infant Tuberculosis*, *The Gospel of Top Milk*, *Diphtheria*, *Hereditary Syphilis*, *Hemorrhages of Newborn*, *Amaurotic Family Idiocy*.

Volume IV. Therapeutics, Development of Therapy, Doses of Diet and Drugs, Fevers and Fever Remedies, Chloral Hydrate, Tuberculin of Koch, Arsenic and Digitalis in Tonsils and Lymph Structures, Functional Heart Murmurs, Lactations, Ergot in Chronic Malaria, Strychnine, Peritonitis, Bronchitis, Jacksonian Epilepsy and Laryngeal Tuberculosis.

Volume V. Pathology.

Volume VI. Addresses.

Volume VII. Address.

Volume VIII. Miscellany.

In 1870, he published with official statistics his pamphlet on "The Raising and Education of Abandoned Children in Europe." He demanded breast feeding for every foundling. (We can congratulate Minnesota on its State Board of Control exacting three months breast feeding from illegitimate mothers). He wrote, in 1870, his famous letter to the Board of Lady Managers of the Nursery and Childrens Hospital of New York: "But there is the sad fact staring you in the face, that you have admitted 371 children and buried 173." Jacobi lost his job as physician to the institution, but he gave moral courage to many physicians to face sad facts and try to remedy them in spite of criticism of the laity.

In 1872, he was President of the Medical Society of the County of New York, and again he commented on infant asylums: "The worst figures of the European foundling hells of former centuries are not more fearful than ours . . . the younger the child and the larger the institution the surer is death. Modern civilization planning for the best, but mistaken about the means, has succeeded in outheroing Herod."

In 1877, he contributed to Gerhardt's "Handbuch der Kinderkrankheiten," "Care and Feeding of Children," "Dysentery," and "Diphtheria." It is of interest that he did not accept Klebs Loeffler's work for many years in regard to the etiology of diphtheria.

In 1881, he wrote on "The Sanitary Care and Treatment of Children" for the Thomas Wilson Sanitarium, a benevolence of a Quaker who assisted in founding the Johns Hopkins Hospital. He contributed also to Keating's "Cyclopedia of Children's Diseases."

In 1877 he wrote in Pepper's "System of Medicine," a treatise on "Intestinal Diseases of Infancy and Childhood."

In 1893, he presented two volumes of his writing to his surviving grandchild on her sixteenth

birthday and even in his letter of presentation the same gentle irony and good humor may be noted as in all of his works.

In 1895, he completed "The Therapeutics of Infancy and Childhood," published by Lippincotts.

In 1900, he was 70 years old, but he was as quick at repartee as ever. Medical education and public welfare interested him and he contributed in advance of his students.

At the age of 82 years, in 1912, he was elected President of the American Medical Association. His attitude on birth control brought a flood of criticism, but with his humanitarianism, sympathy, many deep and personal sorrows, loss of talented friends, and his materialistic mechanistic philosophy of his early education, one would be surprised to have him take any other view.

His attitude was international rather than national. "His outlook was cosmic, not local; his spirit belongs not to the arbitrary years of his birth and death but to the coming generation." He died in 1919, at the age of 89 years, endeared to the nation at large but most particularly to its scientific men and women, many of whom he had inspired and encouraged.

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METASTATIC MELANOMA OF BOTH EYES

FREDERICK C. CORDS and WARREN D. HORNER, San Francisco (*Journal A. M. A.*, Aug. 30, 1930), report a case of metastases to both eyes from a cutaneous melanoma. This was a congenital nevus of the skin which apparently caused no difficulty until it was irritated by scratching. Following this, a rapid growth took place, and one year after its removal the patient died of multiple metastases affecting nearly every organ of the body. In the eyes there was involvement of both ciliary bodies, the optic nerve of one eye and an isolated tumor in the angle of the iris. The choroid was normal. Isolated metastases to the ciliary body and iris without disease of the choroid are unusual. Careful search of the literature has revealed only three similar cases. In all these cases and in the one reported here, metastases appeared in the eye one year after removal of the skin nevus. In the three cases previously described the tumors were termed melanosarcoma, while at the present time the tendency of pathologists is to classify them primarily as melanocarcinomas.

A NEW EDITORIAL BOARD FOR THE JOURNAL-LANCET

Established sixty years ago, THE JOURNAL-LANCET has kept pace with the development of the profession in the Northwest, recording and reflecting its opinions and its accomplishments. It has ever had a vigorous, vital editorial policy, a policy which had in mind the best interests of the physicians in the Northwest.

The virile and fighting spirit of Dr. W. A. Jones has always been reflected in the editorial section. During the years that he has been editor, and they are close to thirty now, he has kept in touch with the pulse of the profession and has fought with them, and sometimes against them, for what he thought was best for the profession, as a whole.

The accomplishments of Dr. W. A. Jones are many. Last year he was a vice-president of the American Medical Association. He was one of the founders, and former president, of the Minnesota Academy of Medicine, and a former president of the Minnesota State Medical Association. Other honors have been heaped upon him, honors which were his due because of his keen mind, active efforts and willingness to serve.

His students and his colleagues have ever appreciated his broad vision, and to them THE JOURNAL-LANCET represents a monument of his accomplishments; to them it represents a definite symbol of what he has done for the betterment of the profession.

The time has come, we believe, to develop the scope of THE JOURNAL-LANCET that it may better keep pace with the rapid advances of the medical profession in the Northwest. Scientific papers and addresses will appear as they have in the past, as well as proceedings of local societies. In addition to the scientific section more space will be devoted to the broader questions of medical economics, medical legislation, as well as other problems which vitally affect the practice of medicine. It will not be bound by precedent nor by fear of personal prejudice, favoritism or sectionalism, but shall be guided by the spirit of the greatest good to the greatest number.

To this end an editorial board has been appointed to cooperate with Dr. W. A. Jones and develop a broader program for THE JOURNAL-LANCET toward the accomplishments of these purposes. The Editorial Board for THE JOURNAL-LANCET now consists of the following men:

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Other leading men in the Northwest will be added from time to time to this board to take care of the increased program and assist in the development of the enlarged and broadened policy of THE JOURNAL-LANCET.

We ask the medical profession of the Northwest to assist in this new development. The changes in THE JOURNAL-LANCET as they take place will be slow but they will, we hope, be definite and progressive. We want to reflect the pulse of the profession and to this end we ask our readers to send in scientific contributions and news items as well as their opinions on the medical problems of the day so that we can conduct an open forum that will make THE JOURNAL-LANCET the leading medical journal of the Northwest.

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—806.

Man, 59, admitted to hospital February 27, 1930, with the following history. Pain in abdomen began in September, 1929; this was dull in character and was constant. It had no relation to meals and was not relieved by soda or food. During the three weeks prior to admission the pain had been radiating toward the back and on the right side. Patient had never been nauseated and never vomited. Loss of weight about 30 lbs. in seven months; thought to be due to the diet and baths he had been taking. Had seen several doctors and had numerous x-rays taken. X-ray did not show any mass in the stomach. Had jaundice several years ago. No diarrhea. No dark colored stools.

On examination, patient showed a recent loss of weight and was cachectic. Heart showed systolic murmur at the apex; no apparent enlargement. Blood pressure was 95/65. On palpating the abdomen, there was a mass made out beneath the left costal margin, extending downward and to the right. It was about nine cm. long and 5 cm. wide. The mass appeared to pulsate, did not move with respiration, was tender, and on deep palpation caused severe pain. Inguinal glands were enlarged. Knee reflexes were very sluggish; Babinski negative; cremasteric poor; Romberg negative; abdominal normal.

Patient gave a history of gonorrhoea three years ago. Wassermann was positive on admission. Repeated x-ray examinations showed a spastic stomach with a slight irregularity along the lesser curvature and peristalsis was present. Patient was hospitalized for observation and antisiphilitic treatment.

Blood pressure 100/65. Urine negative. Blood: hemoglobin 76 per cent; erythrocytes 4,430,000; leucocytes 7,900 with 62 per cent polymorphonuclears, 33 per cent lymphocytes, and 3 per cent monocytes. No enlarged nodes made out on examination of the chest. There was massive diffuse enlargement of the thyroid.

Post-mortem report. No edema; no jaundice. Old healed chancre on the glans penis. Scanty subcutaneous fat. Peritoneal cavity contains 500 c.c. of thin clear fluid. The liver is 18 cm. below the costal margin on the right. Dense adhesions throughout the upper part of the right pleural cavity. The heart weighs 450 grams; hypertrophy of the left ventricle; patches of scar tissue through the

muscle of the left ventricle; early syphilitic aortitis without involvement of the valves or of the coronary orifices. Extensive tuberculosis of the upper lobe of the right lung with a cavity two cm. in diameter; edema and congestion of other parts of the lungs. The spleen weighs 280 grams. The liver contains several nodules of metastatic carcinoma with a chronic passive congestion. Massive carcinoma of the body of the pancreas, not involving the head. Extensive metastases into the regional lymph nodes. Large colloid goiter.

Diagnoses. Carcinoma of the body of the pancreas with metastases in the liver and regional lymph nodes. Cardiac hypertrophy of hypertension type with some myocardial fibrosis and passive congestion of the lungs, liver, and spleen. Tuberculosis of the upper lobe of the right lung. Early syphilitic aortitis. Colloid goiter.

Comment. Several important lesions are present and it is not entirely clear which one is chiefly responsible for the patient's death. The carcinoma of the pancreas is no doubt largely responsible for the symptoms and the loss of weight. A terminal heart failure is conspicuous. The syphilitic lesion in the aorta was not responsible for symptoms. A carcinoma of the body of the pancreas does not block the common bile duct and therefore is quite different clinically from the usual carcinomas which involve the head.

Autopsy—30—1005.

A young man, 18 years old, was injured in an automobile accident June 19, 1930, at which time he received two cuts on the dorsum of his left hand; one cut was two cm. long at the base of the little finger in a transverse direction; the other was three cm. wide and eleven cm. long, extending from the middle of the wrist to the base of the ring finger. He was taken to a hospital where the tendon was sutured, the wound dressed, and the patient was then sent home.

The hand became swollen, the swelling extending to the wrist. On June 22 the swelling extended to the elbow. Temperature was 100°. The doctor sent him to the hospital. A large blood clot, involving the back of the hand and wrist, was washed out with normal saline, the wound sutured, and the hand dressed. The temperature remained normal until June 27, when it was 100° and rose rapidly. At this

time there were subcutaneous petechiæ over the entire body; these lasted but a short time. The wound discharged a little serum. There was infection apparent in the cut at the base of the little finger. The patient became very toxic and vomited.

July 1 the arm was improved but the general condition was worse. On July 2 a diagnosis of bronchopneumonia was made. On July 6 he was operated upon for empyema of the left side of the chest, at which time two quarts of pus were drained out. On the evening of July 7 he became worse. He died July 8, 8:30 a. m.

X-ray of the chest, July 3, showed bilateral bronchopneumonia. On July 5 and 6 there was exudate in the left pleural cavity.

The urine showed a very faint trace to + albumin with granular casts. The temperature ranged from 98° to 105°.

Post-mortem report. The inflammation has practically subsided from the wound in the left hand. The empyema in the left chest is well drained but the pleural surfaces are covered with a fibrinous exudate. The pericardial cavity contains about 400 c.c. of cloudy fluid, and the pericardial surfaces are covered with a fibrinous exudate. The heart shows cloudy swelling. Marked bronchopneumonia is present throughout both lungs, especially the left. There is cloudy swelling of the liver and kidneys.

Diagnoses. Bronchopneumonia, empyema, and pericarditis, following infected wound of the hand.

Comment. It occasionally happens that the patient dies of secondary infection after the primary site of the infection has practically healed.

Autopsy—30—1103.

The case is that of a man, 68 years old, admitted to the hospital July 23, 1930. He had a mild diabetes and had been discharged from the hospital about one week previously. Shortly before his re-admission he was seized with a sudden severe attack of pain over his chest which was followed by unconsciousness. He was brought to the hospital immediately. He was comatose; his face was ashen gray; his lips and fingers were bloodless. He could be made to answer questions, but his replies were not understandable. The heart could not be heard. There were no râles in the anterior portion of the chest. The abdomen was somewhat tense and the organs could not be felt. The radial arteries were extremely hard and fixed, and the pulse could not be felt. Carotid pulse was felt to be slow. There was a slight acetone odor to the breath mixed with a foul odor of stomach contents.

Urine showed 4+ albumin and a trace of acetone. Van Slyke 33 per cent. Blood sugar .47 per cent.

Postmortem report. Body well developed and well nourished; no edema; no jaundice. Marked edema of the lungs. The heart weighs 360 grams; moderately dilated; all valves normal; extreme sclerosis and narrowing of the large branches of the left coronary artery; thrombosis of the anterior descending branch of the left coronary; thrombosis of the terminal portion of the circumflex branch of the left coronary; the coronaries are markedly calcified. There is extensive fibrosis of the left ventricle. Marked fibrous thickening of the endocardium over a large part of the left ventricle. Se-

vere atherosclerosis of the aorta and large arteries.

Diagnosis. Coronary sclerosis and thrombosis with fibrosis and myomalacia of the heart.

Comment. Coronary disease is very frequent in elderly diabetics. It is a frequent cause of death. The clinical picture often suggests an acute abdominal disease, such as perforated ulcer.

Autopsy—30—984.

The case is that of a woman, 41 years old, who was admitted to hospital on June 20, 1930. She had had a severe cold with cough in January, 1930. The cough continued although other signs of her cold disappeared. Frequently in the morning thick bloody sputum was raised. About two weeks before admission she began to be dizzy when up and around. She felt as if she were going to fall and had attacks of diplopia. The attacks became more and more frequent, and for five days she had felt dizzy every time she raised up. At the same time she was bothered considerably with nausea and vomiting. Three days before admission she developed a throbbing ache in the frontal region and in the anterior portion of the scalp. This condition changed to a dull pain in the region of the cranium, accompanied with stiffness and soreness of the neck. There had been no previous illness.

On examination the breath sounds were somewhat increased over both lungs. There was no impairment on percussion. The heart seemed normal. Blood pressure 125/80. Abdominal examination was negative. X-ray study revealed masses in the lower lobe of the right lung which were interpreted as areas of bronchopneumonia.

Blood chemistry gave normal figures. Urine was normal. Hemoglobin was 101 per cent; red cell count 5,200,000; white cells 10,700 with 72 per cent polymorphonuclears. Wassermann and Kahn tests were negative. Repeated spinal punctures were done. Spinal fluid showed positive Pandy, positive Noguchi, but low cell counts (never more than 2). Colloidal gold gave no curve.

Shortly after admission the patient's chief complaint became that of pain in the neck. X-ray plates of the cervical spine were negative. She died July 3, 1930.

Postmortem report. The pleural cavities are free from adhesions and fluid. The heart weighs 260 grams and shows no disease. The left lung weighs 320 grams; shows no gross nodules but purulent fluid may be expressed from the larger bronchi. The right lung weighs 460 grams. The lateral half of the lower lobe shows a number of fairly firm nodules, the largest of which is 4x1 cm.; numerous smaller nodules are found in this lobe. A primary growth about 2 cm. in diameter is found, involving one of the secondary bronchi. The left lobe of the cerebellum is almost completely replaced by a metastatic tumor.

Diagnoses. 1. Primary carcinoma of the lung with metastasis to the cerebellum. 2. Purulent bronchitis.

Comment. Carcinoma of the lung, when of small size as in this case, is easily mistaken for bronchopneumonia, especially when associated, as it usually is, with a purulent bronchitis. Metastases to the brain are frequently seen in carcinoma of the lung.

**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Viletta Roche, Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Typhoid Fever

The Health Department has recently been called upon to make investigations of three outbreaks of typhoid fever, one at Hettinger, one at Starkweather and one at Valley City, with a total of 20 cases and two deaths.

At Hettinger, seven cases were traced to infected milk supply, brought about by cows wading in water heavily contaminated by city sewage and the disease germs transmitted to the milk during the milking process. Improperly sterilized milk bottles was an additional cause for further spread of the disease. This outbreak emphasizes the need of adequate supervision and inspection of small city milk supplies and the need of a proper milk ordinance regulating the production, handling and delivering of this valuable food product.

At Starkweather, four cases were traced to a local restaurant where a cook recently hired was found to be a typhoid carrier. A serious epidemic was undoubtedly averted due to Dr. Fawcett's promptness in discovering the common source. This incident clearly points out the need for examination of all food handlers for the protection of the public.

At Valley City seven cases occurred in one family, with two deaths. A visiting relative was in all probability a typhoid carrier and responsible for these cases.

In all three instances, as soon as the common source was traced, usual precautions were taken and no further cases developed.

Tularaemia

With the reopening of hunting season, the possibility of contracting Tularaemia will be greatly increased and every precaution should be taken to avoid it. It is interesting to note that almost all cases in North Dakota have occurred in the Slope county, south and west of the Missouri River. Hunters, cooks, housewives and market men are the most often infected.

Rubber gloves should always be worn by those dressing or skinning wild rabbits or fowls, as the disease is easily transmitted through an abrasion of the skin, a prick from a broken bone, etc. (The writer suffered an infection in this last manner a few years ago.)

Two types of the disease are recognized,—the glandular and the so-called typhoid type. The former is characterized by painful enlargement of the glands near the site of infection or initial lesion. In the latter type there may be no initial lesion noticeable, but there is a general feeling of malaise and irregular fever. The duration is indefinite ranging from a few weeks to several months. Definite diagnosis can be made by an agglutination blood test as in typhoid fever and can thus be differentiated from typhoid. Obscure and indefinite

cases simulating typhoid fever should be regarded as possible cases of Tularaemia and a blood agglutination test made to determine same.

Tularaemia is a reportable disease and case reports to local health officers should be made in the regular manner. There are no quarantine regulations for the disease.

Fatal Accidents

The Department now has ready for distribution a pamphlet entitled "Fatal Accidents in North Dakota," covering a six year period. It will be sent to anyone upon request.

Milk Sanitation in North Dakota

The milk sanitation status of the following North Dakota cities, as determined by recent surveys made by Associate Milk Specialist F. A. Clark of the United States Public Health Service and A. L. Bavone, State Sanitary Engineer, is given in the accompanying table. The ratings were made on a basis of compliance or non-compliance with the requirements for Grade A raw or Grade A pasteurized milk as defined by the Standard Milk Ordinance.

CITY	RATING			PERCENTAGE OF MILK PASTEURIZED
	RETAIL RAW	RAW TO PLANT	PASTEURIZATION PLANT	
Bismarck	59%	55%	60%	82%
Devils Lake	61%	48%	55%	12%
Dickinson	52%	—	—	—
Fargo	70%	47%	88%	80%
Grafton	48%	51%	52%	54%
Grand Forks	62%	47%	88%	58%
Harvey	42%	—	—	—
Hillsboro	52%	—	—	—
Jamestown	57%	49%	80%	61%
Mandan	66%	58%	56%	53%
Mayville	41%	—	—	—
Minto	52%	52%	60%	47%
New Rockford	42%	43%	46%	75%
Valley City	52%	44%	47%	78.5%
Wahpeton	57%	45%	51%	14%
Williston	51%	38%	43%	47%

If you wish to have your city rated before the next annual survey conducted by the United States Public Health Service, communicate with the Health Department.

On September 1, Maysil M. Williams, M.D., Director of the Division of Child Hygiene, who has been on leave of absence for a year studying at the Harvard School of Public Health, returned to North Dakota. During her absence, Dr. M. May Allen of Massachusetts acted as director of the Division. Dr. Allen conducted 100 pre-school conferences in 20 counties, assisted by Mrs. Martha Overgaard, R.N. These conferences were attended by 2,214 mothers and 3,234 pre-school children were examined. The program of pre-school conferences

will be continued for the remainder of the year by Dr. Williams.

Birth and death certificates must be filed in the township where birth or death occurs. Many registrars complain that certificates are filed in the city or village, whereas they should have been filed with the township clerk. It is very discouraging to these people, who are really trying to keep accurate township records, to have the only occasional birth or death which they have to report, diverted into other channels. From the standpoint of this department, it of course completely upsets our statistics if so many births and deaths are styled urban when we know that a great many of them belong in the suburban group. It also causes the death rates of the cities to be higher than they are in reality.

The county auditor of your county will furnish you a list of all registrars and it will prove a great convenience to you.

MISCELLANY

THE INTERNATIONAL MEDICAL ASSEMBLY

The coming meetings of the Inter-State Postgraduate Medical Association of North America to be held from October 20th to 24th, inclusive, will not only honor the City of Minneapolis by its use of the Minneapolis Auditorium as its gathering place, but will serve as an opportunity of postgraduate education to the medical profession of the Twin Cities and of the Northwest. We look for a full representation of the membership of the Hennepin County Medical Society at these meetings. The local profession, acting as the host to the Assembly, will present no papers upon the program, but should make up a large block of the audience to welcome the Assembly's great group of well-known and representative speakers coming from other cities.

An extensive scientific and technical exhibit will furnish interesting and useful objective lessons to the Assembly's visitors. Of the technical exhibitors, there are some 103, and of the scientific exhibitors 15.

Purpose

The International Medical Assembly is the opportunity of a week's intensive graduate study in Medicine, presented by The Inter-State Postgraduate Medical Association of North America. It is to be held this year from October 20th to 24th, inclusive, at the Minneapolis Auditorium.

Membership Plan

The Association is unique, among Medical organizations, in respect of the fact that aside from a few life members it has no regular membership. Under a registration fee of \$5.00 any physician in good and regular standing, in the American and Canadian Medical Associations, and their component parts, is a member of the Assembly, for the purpose of this meeting. He does not become, thereby, a member of the Association. Life members are exempt

from the registration fee. They will present their life membership cards. The courtesies of the Assembly are extended to Army, Navy, Marine Corps and Veteran's Bureau officers, and to full-time officers and officials of local, State and National Public Health Services, upon presentation of their credentials. All physicians should come prepared to show their County, State or National Society Membership Cards.

Registration Bureaus

A registration bureau will be set up at the Hotel Nicollet, on Sunday morning, October 19th, and local physicians of City, County or State are requested to register in advance of the meeting. Local committee men are asked, also, to register in advance of the opening of the Assembly.

The Main Registration Bureau will be placed at one end of the Exhibit Hall on the lower level of the Auditorium. It will open on Monday morning, October 20, 1930, in season for the first Session of the Assembly. On and after this date all registration will be conducted in this Main Registration Bureau. Ladies will be asked to register at a special bureau and distinctive badges will be issued to the men and women.

All physicians must register.

The Plan of the Program

The plan of program for The International Medical Assembly is as unique as its membership plan. The Opening Session of the Scientific Program will begin promptly at 7:30 o'clock, Monday morning, October 20, 1930. The organization is essentially a hard-working one. This early morning hour will mark the rising-bell of business for the Assembly each day. The morning hours of the entire meeting will be occupied by a succession of Diagnostic Clinics. There will be an intermission at noon, presumably for luncheon, but it will be immediately followed, at an unstated hour, by two or three more Diagnostic Clinics.

The afternoon sessions will be devoted to a series of addresses. Both morning and afternoon meetings will be broken by intermission to permit of visits to the Technical and Scientific Exhibits. Evening sessions on each day, excepting Friday, October 24th, will be held, at which a number of addresses will be given.

In the four days' meeting, 38 Diagnostic Clinics, 84 Addresses and 118 Exhibits will be presented. The program could hardly be more compact, while practically every branch of medicine and surgery is covered by its papers.

It is the aim of the Inter-State Postgraduate Medical Association, in its annual International Assemblies, to present to the Medical Profession every well-validated advance in Medical Science and every approved product of research related to it.

It devotes itself exclusively to post-graduate medical education. It exercises no political influence. It enters into no legislative activities.

Every physician of the Twin Cities and of the State at large is invited to share the outstanding values of these meetings of The International Medical Assembly. Set aside this week for a visit to Minneapolis and spend it at the Auditorium.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
 The Official Journal of the
 North Dakota and South Dakota State Medical Associations
 The Hennepin County Medical Society
 The Minnesota Academy of Medicine
 The Soo Railway Surgical Association
 and The Sioux Valley Medical Association

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MINNEAPOLIS, OCTOBER 1, 1930

"A CURE FOR DOCTORS' BILLS"

A very interesting article appears in the October *Atlantic Monthly* under the above caption, written by Evans Clark. He analyzes and discusses the workings of the clinics that are forming the country over at the present time. He argues that the medical-profession guild is the solution for many of the present difficulties which come to light with the incurring of the doctor's bill. "The medical guild avoids control of the profession by either the State or the 'industrial machine.' It makes possible a desirable reduction in the cost of medical care to the public, and under more efficient management than the State, at least, is likely to offer. And to the doctors it offers the ultimate advantage of continued control of their own destiny and the destiny of their profession," says Mr. Clark. Mr. Clark's article touches on many points under discussion at the present time, all with a view to arriving at a solution, and we take the liberty of bringing out these points again by quoting him.

"The medical-guild plan offers the practical possibility of bringing the 'fixed-price' principle into medicine. While some people will always have to be given medical care, as they are given food and lodging, by charity and public institutions, all but those on the poverty line could afford to pay dues to a medical guild

—especially if the dues were graded in accordance with the degree of extra comforts provided to its members. The guild doctor would never have to concern himself with the income of his patients.

"Nor would the guild doctor ever have to worry about the amount of his own income next year."

This offers vague explanation of what might be done when we take into consideration the number of doctors in the country even in the state of Minnesota that care for patients gratis, out of the goodness of their hearts; it seems almost impossible that any guild or clinic, or anything of the kind, could be gotten up and made feasible.

Then, too, there is the matter of insurance which comes in with the clinics and which Mr. Clark proposes to work out satisfactorily. He assumes that a typical victim speaks his mind openly: "I find peace of mind in knowing that if someone runs into my car and tears a fender off I can stand the expense. My insurance company will pay the bill. The same thing is true of fire. If my house burns down I am guaranteed the funds with which to rebuild. If I should come to die I should have the satisfaction of knowing that my life insurance policies will at least keep the family from the poorhouse.

"But if I or any member of my family should have another serious illness I doubt if I could ever be rid of the debts with which my life would be burdened. I cannot understand why society has not devised some method by which I and millions like me may be assured in advance that we can meet the costs of illness. After all, I am more likely to be sick than to suffer by fire or be robbed or lose my life. Why can I not be protected where protection is most likely to be needed?"

"I should not speak with such feeling were I not faced with doctors' bills amounting to \$3,000 which I must meet out of a yearly salary of \$9,000, almost all of which is needed to meet the ordinary running expenses of the family. One of my children had a mastoid operation recently after a long spell of scarlet fever, and as a result of the strain my wife developed an ulcer of the stomach which required much nursing and hospital care. Before that there had been no major illness in the family for ten years. Most of my savings had been used to pay for our house. And now, in less than a year what little money I had accumulated is gone and I am seriously in debt."

Speaking from the physician's point of view, we might add that much of the difficulty that arises between patient and doctor is due to the fact that all patients do not intend to pay nor attempt to pay. Mr. Clark says, "One thing I am sure of, this question must be answered by someone. Too many people are asking it to be denied for long. If the doctors fail to find an answer themselves, someone else—or the government—will."

"'Group practice,' as it is called has recently made impressive progress. Especially in the Middle West, groups of doctors have combined to offer more or less complete medical service, and many of these groups have achieved conspicuous success, both therapeutic and financial.

"The Mayo brothers' clinic at Rochester, Minnesota, is perhaps the most widely known of these group-practice units. . . . Most of them are found in states west of the Mississippi, while Minnesota and Texas are credited with more than any other states. The structure and origins of the groups differ, but usually their aim is common; a single service to the patient and a joint income to the participating physicians, with consequent reduction in overhead costs. . . . In a western city an obstetrician joined forces with a general practitioner, a gynecologist, and a nose and throat specialist, who together pooled their resources. A surgeon and several others were later incorporated in the group and a hospital was built. In another town of 30,000 sixteen doctors with their personal funds and some commercial borrowing put up a building with equipment costing \$200,000 and now operate as a unit." Of course, they can only be successful if they have successful management, and so far we hear little of that except that if the clinic provides itself with a good manager or business man who sees to collections and the matters of filing and office routine the results are evident. It does seem that group practice attracts more patients than the individual practice, but in the meantime the individual practitioner goes on much as usual, accepting what comes his way in the matter of patients, collections and bad accounts. Unless he were to try out the group practice he would not be in a position to say whether it benefited his particular case or not.

"But on the economic side the advantages of group practice are even more obvious—for doctor and patient alike. Through the joint ownership of plant, equipment and clerical forces great savings are made in operating costs, which can be shared by the patients in reduced fees,"

says Mr. Clark. That the actual fees charged at a clinic are less than the individual physician would charge, we cannot say. It would seem that the physician belonging to a group would call in those of his associates whom he might choose, and it would be reasonable to think that the patient would get the best attention. Of course this does not prevent the patient from going to another physician if he so chooses, neither does it prevent the group physician from calling in any physician that he may choose. They are not bound so closely as that.

Another feature that comes up in this group practice is the proposed periodical medical examination; that is done much more easily by a group staff than by a practicing physician, but that is subject to change because people themselves are very uncertain about whom they will stick to for their medical services. They may be very enthusiastic at first, and later, as in other business matters, they lose courage and want something new, and we are powerless to help it.

The periodic examination and the insurance that can be added to group clinics are two very valuable points which he brings out in his article: "But to be a guild the group would have to offer a representative selection of specialized professional services at fixed annual fees. Whether these services are rendered by the members or owners of the guild, or by a professional staff employed by them, is a relatively unimportant detail. Each guild would, of necessity, have two or more general diagnosticians. These doctors would form the keystone of the arch, for they would be in closest contact with the lay public, and through them cases would be referred to the specialists of the guild as their services were required. Upon the personality and professional standing of the diagnosticians would the success of the guild largely depend."

The proposed plan of a membership in a guild where examination and treatment came with annual dues paid would be purely experimental. As in the case of insurance premiums, the dues would have to be paid whether services were rendered or not, and preferably in advance. We fear that something might go amiss in the plans and the physicians in the guild would be unable to detain the patient just as the individual physician would. We think this would work out where actual service would be rendered for the dues, but in the case of no service rendered for a period of years there is liable to be dissatisfaction. When a patient is presented with a bill

of \$1,500 and given ten years to pay at the rate of \$150 per year he might kick over the traces. We admit there are features about it that would bear a trial, and this is one of the problems to be met.

THE RESIGNATION OF DR. WALTER E. LIST AS SUPERINTENDENT OF THE MINNEAPOLIS GENERAL HOSPITAL

The recent resignation of Dr. Walter E. List as the Superintendent of The Minneapolis General Hospital has fallen with heavy weight upon that institution. It was accepted at the meeting of the Board of Public Welfare on Thursday, September 11, with the expression of the deep regret of its members. It takes effect October 1.

Dr. List is to take charge of the Jewish Hospital of Cincinnati immediately on his arrival in that city. Cincinnati is his former home and there his parents are resident.

The many friends of Dr. List, his associates in the medical and nursing professions here, the University of Minnesota to which, under his management, the Minneapolis General Hospital has contributed so large educational facilities and so wide an opportunity of research and clinical investigation, together with the many health and welfare organizations of the city with which he has been so closely in working touch, tendered to Dr. and Mrs. List a testimonial banquet on the evening of September 29, at the Hotel Nicollet.

Many people gathered that night to express their appreciation of the much that Dr. List has done to bring the relatively undeveloped institution of his early days in Minneapolis up to the enviable position it occupies today among the great general hospitals of the country. The occasion was taken to present Dr. List with a souvenir reciting the several features of the remarkable service he has rendered to the city, the institution, the medical and nursing profession and, most of all, to the patients, by the thousand, he has cared for, and by many of whom he is greatly beloved. A reception followed the banquet at which many had the opportunity to assure Dr. List of their regret over his going and to bid him and Mrs. List God speed in their going to their old, new home.

RICHARD OLDING BEARD, M.D.

Minneapolis

THE DOCTOR AND THE COMMUNITY CHEST

As related in the *Journal of the American Medical Association*, December 28, 1929, among Georgia notes, we find an example of courage and good sense that should reflect the position of the medical profession regarding contributions to welfare work in general. The article referred to is as follows:

"County Society Answers Criticism of Community Chest.—The Fulton County Medical Society, Atlanta, has passed a resolution replying to articles published in local papers, November 24, in which physicians were criticised by the Community Chest for their so-called failure to do their share for Atlanta's sick and needy. The resolution pointed out that the physicians of Atlanta last year rendered free medical service to 84,000 residents with a conservative valuation of more than \$2,000,000, and that this was the greatest single contribution made to Atlanta's sick and needy. The society protested against the unjust criticism of the Community Chest. The free service rendered by its members were considered ample contribution toward their share to all public welfare work and public charity in Atlanta. The resolution was not to be construed, however, as preventing members from making other contributions in addition to their services, if they felt inclined."

The average doctor knows of his yearly charities of a private nature but has not had the courage to refuse a subscription to every drive made in his community because he did not care to be listed as a poor citizen. The physician's time and knowledge is his stock in trade as much as the sugar and tea on the grocer's shelf, but from the nature of his goods he can hardly refuse the same, when called upon. They know full well that over 25 per cent of their patients cannot or will not pay. There is another class that he serves, those who strictly belong to charity. These he will willingly help, but never makes an entry of the same upon his books. In the *Journal of the American Medical Association* of March 29, 1930, on page 1014, you will find that there are 139,000 physicians in private practice with an average *gross* income estimated at \$4,500. Now out of this income he must keep up his professional knowledge through postgraduate work, membership in societies, maintain an office and meet its incidental expenses, furnish a conveyance for his daily rounds, pay taxes and professional liability insurance. What has he left to support his family, educate his children, or lay aside something for the support of his old age? The public demands more each year of its doctors. He must keep pace with the times, and his office must

be equipped for the most modern treatment of diseases. This equipment must be changed every few years as it gets out of fashion. Then all the charitable welfare institutions expect to receive the services of the profession, freely and without cost. Surely the doctor has donated his share, but the good citizen expects more. He wants the doctor to educate him as to how he can keep well. The doctor is criticised if a warning is not sounded when smallpox "comes to town," but if he suggests vaccination as a preventive measure, someone will be heard to say, "Doc only wants to scare a few vaccinations out of us," when one case of smallpox would pay for all the vaccinations he might make in a lifetime. No other business has done as much as the practice of medicine to decrease its income and while we admit a certain degree of moral responsibility, there is a limit, and we should have the courage to refuse to subscribe to "drives" for this and that, and follow the lead of the Atlanta Society. There is not much difference between the doctor who gives of his services freely to the suffering who need it at the rate of 1,000 to 20,000 per annum for 25 to 50 years and the big philanthropist who leaves a large donation of \$100,000 to \$500,000 to some charity, but there is usually less noise about it.

The doctor finds his expenses increasing and his income decreasing. Our false standard of living fostered by the credit system and "installment buying" is largely responsible for the inability of his patients to pay their bills and consequent loss of revenue with increase of charity work. The doctor must pay cash for the goods of the butcher and grocer and perhaps at an advanced figure as he is supposed to make his money easily and has always been placed on the "sucker list."

The public should be made to realize these features of the case.

JAS. P. AYLEN, M.D.
Fargo, N. D.

NEWS ITEMS

We extend a most cordial invitation to the secretaries of the different District Societies to send us the reports of their monthly meetings as well as any news items that will be of interest to the profession.

Dr. A. Stolinsky has opened a private hospital at Sheldon, N. D.

Dr. Egil Boeckmann, St. Paul, has returned to his offices after an extended trip to Europe.

Dr. B. F. Simon has again been named as city health officer at St. Paul for the coming year.

Dr. and Mrs. E. C. Rosenow, Rochester, Minn., have recently returned from a six months European trip.

Dr. Kenneth Herbst has recently opened offices for the general practice of medicine at Hastings, Minn.

Dr. H. F. Thorlakson, Grand Forks, has moved to Mountain, N. D., where he will continue in general practice.

Dr. Paul A. Bejelland, a graduate of Rush Medical College, Chicago, has opened offices for general practice at Amboy, Minn.

Dr. J. P. LaPointe, who has been located at Munich, has moved to Harvey, N. D., where he will continue in general practice.

Dr. C. J. Emmerling, who has been located at Geddes, S. D., for the past five years, has disposed of his practice and moved to Pekin, Ills.

Dr. A. T. Floew, who has been in active practice for many years at Harvey, N. D., has moved to Fargo, and opened offices for general practice.

The Raiter Hospital, at Cloquet, Minn., will be enlarged this fall by the addition of a two story brick addition to cost about \$20,000 when completed.

Dr. C. L. Rollefson, who has been located at Souris, N. D., for the past several years, has moved to Crosby, where he will continue in general practice.

Dr. and Mrs. G. H. Twining, Mobridge, S. D., have recently returned from a three months European trip that carried them through all of the principal cities.

Dr. W. E. List was a guest of honor at a farewell dinner given in his honor by his many Minneapolis friends before leaving for his future home at Cincinnati.

Dr. S. T. Stenberg, a recent graduate of the University of Minnesota Medical School, has opened offices at Hudson, Wis., where he will enter general practice.

Mr. Martin Anderson, St. Paul, who has been in the railway mail service during the past forty years, died recently and left a special bequest of \$30,000 to the Childrens Hospital of that city.

Dr. W. Lancaster, Wahpeton, N. D., suffered a loss of over \$1,000 when a serious fire destroyed his office, library and many valuable equipments with little insurance to cover the same.

Dr. and Mrs. A. O. Arneson, McVille, N. D., celebrated their 25th year of wedded life last month, and at a surprise party given by their many friends in that city a silver service was presented them.

Dr. H. F. Claydon, son of Dr. L. E. Claydon, Red Wing, Minn., has opened offices for general practice at Zumbrota, Minn. For the past few years Dr. Claydon has been practicing medicine in California.

Dr. D. W. Pollard has been named as the temporary superintendent of the Minneapolis General Hospital until a successor is elected to take over the office left vacant by the resignation of Dr. W. E. List.

Dr. S. Marx White, Minneapolis, president of the American College of Physicians, made an address before the Interurban Academy of Medicine at Duluth last month, his subject being "Arthritis Deformans."

Nurses of southeastern South Dakota held their annual meeting last month at Yankton. After their business session was completed they were the guests of the State Hospital staff for the balance of the time.

Gov. G. F. Shafer of North Dakota named the following as members of the state board of medical examiners: Dr. J. W. Bowen of Dickinson, Dr. C. E. Stackhouse of Bismarck and Dr. F. L. Wicks of Valley City.

Dr. S. P. Meredith, Mankato, Minn., who has been one of the leading physicians of that section of the state for over 40 years, died recently at the age of 78 years. He was a graduate of one of the Chicago medical schools.

Dr. G. A. Hedberg, formerly engaged in practice at Duluth, has moved to Canby, Minn., and become a partner of Dr. G. M. Tangen of that city. Dr. Hedberg is a graduate of the Medical School of the University of Minnesota.

Arrangements have been made to start a cam-

paign to raise \$75,000 for additions and improvements to the St. Luke's Hospital at Fargo. Mr. George Hoenck, one of Fargo's progressive citizens, is chairman of the finance committee.

Plans have been completed for the silver anniversary of the organization of the Minnesota State Registered Nurses Association to be held at St. Paul during the week of October 15 to 18. Miss Margaret Hughes is the president of the Association.

Dr. C. N. Callander, Fargo, one of the leading members of the North Dakota State Medical Society and prominent in civic work at Fargo, died last month of heart disease at the age of 65 years. He was a graduate of the Toronto Medical College.

Dr. F. S. Warren, who has been in active practice at Faribault, Minn., for many years has decided to take a two years vacation. Part of his time will be spent in New York, with a short postgraduate course, then journey South with Mrs. Warren for the winter months.

Dr. Arthur C. Strachauer sailed from New York last month for a tour of Europe and the Orient. He will visit the important cancer centers of Europe, and will stop at Bombay, Shanghai, Peking, Kyoto and Honolulu, and will return to Minneapolis about April 1, 1931.

Dr. Charles E. Remy, assistant superintendent of Michael Reese Hospital, Chicago, has been chosen to succeed Dr. Walter E. List as superintendent of the Minneapolis General Hospital. Dr. List resigned to return to Cincinnati, where he will be superintendent of Jewish Hospital.

Dr. R. W. Allen, Forman, N. D., director of the preventable disease bureau of the state health department, has received official notice from the adjutant general's office of the army at Washington that he has been promoted from first lieutenant in the medical reserve corps to the rank of captain.

The first regular fall meeting of the Sioux Falls, S. D., District Medical Society was held last month, when the following program of papers was presented: Dr. F. C. Nilsson on "Sudden Blindness"; Dr. S. A. Kellar on "Hay Fever"; and Dr. J. B. Gregg on "Medical Ophthalmology."

The Scott-Carver County, Minn., Medical Society were the guests of Dr. H. D. Nagel, Waconia, last month. After a delicious chicken dinner was served, Drs. H. L. Ulrich and E. C.

Robitshek, Minneapolis, presented two very interesting papers, with discussions following by all members present.

Dr. and Mrs. H. W. Froehlich, Thief River Falls, Minn., have returned from a summer's vacation in Europe. Dr. Froehlich reports a most enjoyable trip. He spent many weeks in study at the different hospitals and clinics, and they were very fortunate in having smooth water both ways on their passage.

At a joint meeting recently held at Dickinson, N. D., by the members of the Stark County and the Southwestern District Medical Societies, it was voted to consolidate the two societies under the name of the Southwestern District Medical Society. The first fall meeting will be held at Bowman, when new officers will be elected.

Dr. H. P. Dredge who has been a practicing physician and surgeon in Sandstone, Minn., for the past 27 years, has formed a partnership with his son, Dr. T. E. Dredge, under the firm name of Dredge & Dredge, and will operate the Sandstone Hospital. Dr. B. S. Bohling, another physician and surgeon who has practiced in Sandstone for many years, will be associated with them.

Dr. and Mrs. Emil Geist, Minneapolis, sailed for France last month to be absent about two months. Dr. Geist is one of the two representatives who have been invited from the United States to attend a meeting of a group of medical men which have been called to discuss the formation of an international orthopedic society. The meeting will be held in Paris during October.

The annual meeting of the Northern Minnesota Medical Association, held at Moorhead last month, was one of the best ever held, the attendance being above average and all of the papers presented being of very high order. The 1931 meeting will be held at Hibbing next year. Officers for the coming year are: Dr. B. S. Adams, Hibbing, president; Dr. G. S. Wattam, Warren, vice-president; and O. O. Larsen, Detroit Lakes, secretary-treasurer.

Lester Starr was arrested at Spring Grove, Minn., charged with practicing healing without a Basic Science certificate. The defendant was a member of a group of Indian doctors who have been selling roots and herbs in Fillmore and Houston Counties. Their charges ranged from \$10 to \$60 per person and it has been estimated

that they took in \$4,000 during the time they were in that vicinity. The defendant waived his preliminary hearing and was held to the District Court under bond of \$1,500 which he was unable to furnish. Later, Starr entered a plea of guilty before the Hon. Karl Finkelnburg, Judge of the District Court. The Court sentenced the defendant to sixty days in the Houston County jail. The Court denied a plea for a suspended sentence which means that the defendant will have to serve his time.

One of the outstanding events of the coming International Medical Assembly meeting of the Inter-State Postgraduate Medical Association of North America in Minneapolis will be the banquet at the Nicollet Hotel, Friday evening, October 24. Arrangements have been made for a speaker's program that will include several distinguished guests, both lay and medical from different parts of the world. Medical banquets held here formerly have always received the most favorable comment and it is to be hoped that this occasion may even surpass in success those of the past. Physicians are invited to bring their wives and it is expected that many interested laymen will want to attend. Tickets are \$5.00 a plate. The available space being limited, all those interested should send their checks early for reservations to Dr. A. E. Hedback, Chairman of Ticket Committee, care of Hennepin County Medical Society, Minneapolis, Minn.

Meeting of Missouri Valley Medical Society

The forty-third annual meeting of the Missouri Valley Medical Society will be held in Des Moines, Iowa, Wednesday, Thursday and Friday, October 15, 16, and 17. Headquarters will be at the Fort Des Moines Hotel.

To quote from the Preamble to the Constitution, as adopted during the Society's reorganization in 1927: "The objectives of this Association shall be primarily educational. The Society shall give opportunity to the faculties of the Universities of the District, to members of the Association, and to invited guests, to present such work as will tend to place the practice of medicine in the district on a higher scientific plane."

That this has not been written in vain, we know. Those who have had the good fortune to attend the meetings during the past few years attest to this. The programs have been varied so that they have had universal appeal whether the physician be a general practitioner, a man devoting all his time to teaching in a medical school, or one specializing in a limited field. This policy will be continued.

It has been, and is still felt, that such a Society has a most important rôle to play in the workaday lives of the physicians of Missouri Valley. It brings to our door, so to speak, the opportunity for keeping pace with what is going on under the direction of some of our country's most able research workers and practicing physicians; it affords the means of meeting these men. The opportunity to renew old friendships and the making of new amongst the rank and file of the physicians of the Missouri Valley is assured. All this and more is available without expending the money and valuable time necessary to attend such meetings at greater distances.

The program for this year's meeting has been completed. It includes: Drs. Joseph C. Bloodgood, of Johns Hopkins University, Baltimore; J. H. Musser, of Tulane University, of Louisiana, New Orleans; Russell M. Wilder, of Chicago University; Laurence H. Mayers and Loyal Davis, of Northwestern University, Chicago; Willard Bartlett, of Washington University, St. Louis; E. Starr Judd, of Mayo Clinic, Rochester; Horace M. Korn, F. R. Peterson, and Julian D. Boyd, of the University of Iowa Medical School; Abbott M. Dean, and Aldis A. Johnson, of Council Bluffs; J. B. Potts, and F. Lowell Dunn, of Nebraska University Medical School; John R. Kleyla, and James F. Kelly, of Creighton University Medical School; C. B. Francisco, Earl Padgett, and P. T. Bohan, of Kansas University Medical School and Walter L. Bierring, and N. Boyd Anderson, of Des Moines.

It is felt that with such a program to offer, the officers of the Society may be justified in their belief that this year's meeting will see a record attendance.

A complete program will be mailed about October first, 1930.

J. D. McCARTHY, M.D.
Chairman Program Committee

CLASSIFIED ADVERTISEMENTS

For Sale

For sale cheap, practically new Victor Bedside, complete with Coolidge tube and table. Address 752, care of this office.

Desires Affiliation

Recent graduate, Manitoba, desires affiliation with older man, preferably one doing major surgery. Address 758, care of this office.

To Share Office

Physician to share down-town office with man doing major surgery. May assist and substitute if desired. Address 755, care of this office.

Wanted

Physicians would like desirable office rooms in association with established dentist. Address L. M. Lowe, M.D., 1800 Third Ave. So., Minneapolis.

Physician's Secretary at Liberty

Young lady with five years experience, wants position in doctor's office. Capable stenographer and bookkeeper. Address 753, care of this office.

Technician at Liberty

X-ray technician, with two years clinic experience, wishes position in hospital, clinic or doctor's office. Good references. Address 756, care of this office.

Doctor's Assistant

Young lady with experience would like to locate with Minneapolis doctor as assistant. One year experience. Good references. Address 759, care of this office.

Opening for Physician

North Dakota city of 600 is without physician. Located in North Central part of state. A good location with large trade territory. Address 751, care of this office.

Doctor, Attention!

Doctor, let us sell your practice, find suitable associate, assistant, location, or position for you. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

Position Wanted

Trained social worker would like position in Minneapolis doctor's office. Capable of doing bookkeeping and typing. Will accept full or part time work. Address 750, care of this office.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Oculists and Opticians Attention

Having disposed of my practice elsewhere, will sell my entire equipment of eye, ear, nose and throat instruments; microscope, trial-lenses, ophthalmoscope, etc., very cheap. 2639 Humboldt Ave. So. Phone, Kenwood 0474.

For Sale

Up-to-date 15-bed hospital for sale in one of the finest agricultural districts in South Dakota community; mostly rich German farmers; several churches, very good new school; two banks doing over a million business; farmers' coöperative creamery; for a man doing major surgery, this is a chance of a life time; with the hospital will sell my office fixtures, including a Wappler x-ray, Fischer diathermy, actinic-ray, etc.; my office and modern home can be rented; you must be capable of doing major surgery; \$26,000 will handle it; reason for selling, going to Europe to specialize and locate out west; no triflers please. Address 760, care of this office.

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PROPHYLACTIC GASTROSTOMY WITH INDICATIONS, TECHNIC AND RESULTS IN 44 CASES*

BY E. P. QUAIN, M.D.

BISMARCK, NORTH DAKOTA

Postoperative vomiting is one of the disagreeable after effects following many surgical interventions in the abdomen. It is ordinarily of short duration and without any other important bearing on the convalescence than the pain produced in the wound by the violent contractions of the abdominal muscles. In certain cases, however, the straining and vomiting may recur for two or three days, or longer, and they may give rise to serious concern both to the patient and to the surgeon. This is especially true when the operation has been of such a nature that vomiting and straining may jeopardize the success of the surgical treatment. Regurgitation of duodenal contents into the stomach sometimes continues for several days, even in the absence of definite mechanical obstruction to the normal gastrointestinal peristalsis. This is more likely to happen when there has been much handling and bruising of the abdominal viscera during the operation. It is more pronounced after surgical traumatization in the middle and upper segments of the abdomen than in the pelvic region.

The treatment commonly resorted to, when there is prolonged postoperative regurgitation of duodenal contents, and vomiting, is gastric lavage. It may be necessary to pass the stomach tube several times in the course of the recovery. In certain severe and important cases the tube may be passed at stated intervals in order to deflate and evacuate the stomach and to prevent harmful distension.

The passing of the stomach tube is a very distressing procedure to the majority of human beings even if it is done when there is no recent wound in the abdominal wall. Although the method is usually very effective, it has been known to provoke serious damage to the patient. The choking sensations produced by the stomach tube, and the retching and straining on the sutures after a laparotomy become so intolerable and distressing to some patients, that those features are often spoken of as the most disagreeable and painful recollection of the operation.

The use of the duodenal tube is a more humane procedure, but in order to be effective the tube must be left in situ for hours at a time. Patients with irritable fauces and those with hy-

*Read at the meeting of the South Dakota State Medical Association, Sioux Falls, S. D., May 20 to 22, 1930.

persensitive temperaments sometimes choose to have the quicker emptying of the stomach with the larger tube in preference to the slower, duodenal method.

Wounds heal most quickly and safely when they are in a condition of absolute rest. After gastric and intestinal resections or anastomoses, there is never the perfect quiet and repose at the site of the operation that prevail when other parts of the body have been incised and sutured. Peristaltic movements and gas distension prevent the desired rest of the parts. Distension of hollow organs alternates with collapse as the fluids and gases pass and re-pass in the neighborhood of the visceral wound. Postoperative hemorrhage and even leakage have been caused by the constant commotion of the parts under discussion. The more peristalsis, regurgitation, and vomiting the greater the disturbance to the gastric and intestinal wounds, and the greater the chance for these complications. It would be interesting if we might know whether or not these factors have any causative influence on the formation of peptic ulcer after gastroenterostomy. This question will be mentioned again in this article.

Gastrostomy as a complementary or prophylactic procedure for the purpose of keeping the stomach constantly deflated and empty after operations for acute perforations of gastric and duodenal ulcers has been practiced as a routine, chiefly by Swedish surgeons, for many years. It has proved so useful in these emergencies that in certain desperate cases of gastric perforation where it seemed unsafe to search for the perforation in order to close it, gastrostomy alone, and without any treatment whatsoever of the perforation itself, has saved the lives of some patients. Emptying the stomach and keeping it empty and collapsed stopped the leakage in these cases while adhesions were forming to close the perforation.

With this knowledge at hand and being anxious to avoid the necessity of using the stomach tube with its attendant pain, mental upset, and straining on the suture lines, gastrostomy has been performed by the surgeons of our clinic in combination with abdominal operations for a number of lesions other than perforated ulcers. The results have been so eminently pleasing, both to patients and to surgeons, that we no longer hesitate to apply this technic after any laparotomy when we have reasons to believe that distension, regurgitation, and emesis may become serious handicaps to the patient's

safety and comfort during the convalescence.

The technic followed by us in making gastrostomy is very simple and much like that employed in making enterostomy for temporary intestinal drainage. At the completion of the main operation a place is chosen near the lowest point of the greater curvature, that is, ten to fifteen centimeters from the pylorus. After placing a chromic catgut, or a linen puckering suture, a rubber tube is pushed into the stomach through a stab wound. A No. 24 catheter with its tip cut off is a suitable size in cases of elective operations. In emergency operations a larger tube should be used to prevent clogging from possible food particles and plugs of mucus, the latter being present especially in cases of acutely perforated ulcer. A catgut suture, fastened about two centimeters from the end of the tube, is passed through the edge of the stab wound and tied as the tube is inserted. This is for the purpose of forming an inversion of the gastric wall around the tube. By pushing the tube gently into the stomach at the moment of tying the puckering suture, a funnel shaped depression is formed around the tube. After adhesions have formed, this funnel served as a valve and prevents leakage when the tube is removed. A fold of fat from the nearby omentum is fastened around the tube for two or three centimeters. This keeps the stomach away from the abdominal wall and helps to obviate the formation of symptom producing perigastric adhesions. By watching the natural position in which the stomach rests while the patient lies on the operating table, the tube is passed through a stab wound in the abdominal wall directly over the place of gastrostomy, usually a little to the left of the linea alba. It should not be placed in the operative wound. For the purpose of a steady fixation in the stab wound, a strip of gauze twisted and tied snugly around the tube will give less pain than a suture in the skin.

During the first two or three days after operation there will be an intermittent spurting of fluid from the tube, corresponding to the gastric contractions. Gas is heard bubbling almost constantly into the bottle which holds the end of the tube at the patient's side. It is often astonishing to note the amount and the frequency of the escaping gas. In cases of pronounced intestinal regurgitation, green or brown liquids may escape through the tube for several days before normal peristalsis is reestablished.

The tube is clamped as soon as normal peristalsis has become reestablished. It will be necessary to loosen the clamp from time to time at first to allow an excess of gas or fluid to escape. The patient will promptly inform the nurse if the pyloric emptying should be too slow. He has learned that the sensation of nausea or of fullness and discomfort in the stomach passes away immediately when the tube is opened.

If the tube has been properly fastened in the gastric stab wound, it should be left in situ undisturbed until it is entirely loose and ready to drop out. This usually takes place in from eight to twelve days. Careless pulling on the tube before it is free in the sinus is likely to evert the funnel and produce a temporary leakage of gastric juice. We have seen no leakage since the technic just described has been followed. However, if some leakage should occur after removing the tube, it is of no serious consequence for it will stop in two or three days. Moreover, gastric juice is much less irritating to the skin than is the secretion which sometimes follows the removal of the enterostomy tube from an intestinal fistula.

These patients are very comfortable after operation. Epigastric distensions and emesis are absent and nausea is rare. Gas and regurgitated duodenal fluids escape through the tube, and gastric lavage is encouraged by allowing the patient to drink all the water he desires. Since but little water is absorbed from the stomach, and especially so while regurgitation is present, it is necessary to give fluids freely, subcutaneously and by proctoclysis, to avoid harmful desiccation of the tissues of the body.

The nonuse of the stomach tube is an outstanding benefit from the viewpoint of the patient. The best testimonials on this point have come from some patients who have had experiences with gastric lavage on former occasions, or after former operations. Several of our patients have had prolonged regurgitation of large amounts of bile and duodenal contents. In the past this always signified much distress from retching and vomiting and repeated seances with the stomach tube. With this method the stomach could be lavaged as often as desired merely by drinking a sufficient amount of water.

In order to give some idea of the types of operations in which prophylactic gastrostomy has been applied, the following brief abstracts of forty-seven clinical histories (including three secondary operations), together with results are submitted:

ACUTE PERFORATIONS OF GASTRIC AND DUODENAL ULCERS

CASE I. Male, 50, operated on thirty hours after an acute perforation of a duodenal ulcer with progressive peritonitis. Owing to the patient's desperate condition, it was thought best to disturb the duodenum as little as possible. The edges of the ulcer were simply approximated with one mattress suture and an omental flap tied over it. Gastrostomy was made to keep the stomach and duodenum collapsed and at rest. Drainage of the peritoneal exudate was established in the lower abdomen. The gastrostomy tube discharged large quantities of gas and intestinal fluid for several days. The patient recovered.

CASE II. Male, 23, with an acute perforation of a juxtapyloric ulcer and beginning peritonitis. Closure of ulcer, pyloroplasty, and gastrostomy were made, followed by prompt recovery.

CASE III. Male, 53, with acute perforation of a duodenal ulcer of four hours duration. The ulcer was closed and covered with omentum, and gastrostomy made. A second incision was made in the lower abdomen for drainage. Recovery was uneventful.

CASE IV. Male, 55, had a perforated duodenal ulcer of forty-eight hours duration. Operation: Closure of ulcer with a puckering suture and covering it with an omental flap; gastrostomy. Good recovery.

CASE V. Man, 42, operated on for an acute perforation of a duodenal ulcer. The opening in the duodenum was closed and reinforced with an omental tag, and gastrostomy made. A thirteen hour leakage before operation had started a progressive peritonitis which raised havoc in the lower abdomen. The absorbed infection involved the lungs, and the patient died from septic pneumonia at the end of a week. The absence of all distension in the epigastrium during the entire time after the operation was an interesting and instructive feature in this patient. The autopsy showed the stomach and duodenum collapsed and the omentum holding tightly over the perforation, with no evidence of infection in the upper regions of the abdomen.

CASES VI, VII and VIII. Males, aged 29, 34 and 66. The first two were operated on for acute perforations of duodenal ulcers and the third for perforated gastric ulcer, with advanced peritonitis. These three died from the infection in spite of gastrostomy and all other forms of treatment.

CHRONIC GASTRIC AND DUODENAL ULCERS

CASE IX. Male, 56, had pylorotomy and gastroenterostomy made for gastric ulcer, together with gastrostomy. The operation was followed by severe lung complications, but the abdominal conditions remained very satisfactory throughout his convalescence.

CASE X. A physician, aged 45, with a chronic perforating pyloric ulcer and extensive inflammatory infiltrations in the gastric wall. Polya pylorotomy, jejuno-jejunostomy, and gastrostomy were performed. Recovery was prompt and comparatively free from epigastric disturbances.

CASE XI. Female, 48, had a chronic perforation of a duodenal ulcer communicating with a cavity in the pancreas. Case XII was a male, aged 34, who had a similar condition. Pylorotomy, gastroenterostomy, and gastrostomy were made in both. Case XIII. A male, 57, had his duodenum deeply retracted and covered with massive adhesions due to chronic ulcer for which gastroenterostomy and gastrostomy were made. Case XIV, male 22, and Case XV, female, 30, had pyloric stenosis from chronic ulcers. Pyloroplasty and gastrostomy were made in both. In case XVI, male, 21, an excision of a chronic duodenal ulcer, pyloroplasty, and gastrostomy were performed.

CASE XVII. Girl, 21, had a chronic perforation of an ulcer at the pylorus surrounded by heavy adhesions throughout the subhepatic region. The adhesions were removed; the ulcer was excised; pyloroplasty, omentoplasty, and gastrostomy were made. Case XVIII was a man of 53 with pernicious anemia. In spite of this diagnosis it became necessary to do a gastroenterostomy because of a progressive stenosis of the pylorus due to cicatrization from an old duodenal lesion, the nature of which was not fully determined. Gastrostomy was made for his comfort and to obviate postoperative bleeding. Case XIX, male, 39. Posterior gastroenterostomy and cholecystectomy were made for chronic duodenal ulcer and cholelithiasis, followed by gastrostomy.

In these nine cases prophylactic gastrostomy was made because the operations had been severe in character, requiring an unusual amount of handling and retracting of the organs, and also to insure a safe and comfortable convalescence. The recovery in all of them was much easier than it would have been in a similar group without gastrostomy. They had no distension, nausea, or emesis, and required less

opiates, nursing, and worry than otherwise would have been the case.

VENTRAL INCISIONAL HERNIAE

CASE XX. Male, 40, had been operated upon for gall stones a few years previously and had a protrusion in the scar, the size of two fists. A subphrenic abscess had followed the operation and this had been drained through a thoracotomy with resection of the right eleventh rib. At the place of the thoracotomy was a second, thoracic hernia within which the right lung played in and out at each respiratory effort. The repair of the ventral hernia proved exceedingly difficult because of the attenuated aponeurosis.

CASE XXI. Male, 65, reported that he had suffered seriously from protracted postoperative emesis at the time of a cholecystectomy performed some years previously. The wound had reopened at that time and attempts at secondary closure of the wound had been made. There was a wide hernial defect. The patient also had intermittent attacks of intestinal obstruction with much pain and distension. It was found at operation that these attacks were caused by multiple, stenosing, intestinal adhesions. Several loops of the small intestine were incarcerated in the hernial sac. The unravelling and freeing of the intestine inflicted numerous traumatizations of the serosa and necessitated suturing of many denuded areas. An indistinct mass was palpated in the neighborhood of the pylorus under a matting of adhesions, but it was not considered advisable to explore this thoroughly owing to the severity of the surgical trauma already inflicted. This case will be referred to later.

CASE XXII. Man, 47, had an enormous hernia in the epigastrium with a thin covering of scar tissue. A cholecystostomy had been made a year previously. A sinus discharging pus and occasionally bile was located in the midline near the umbilicus. At operation this sinus was found to lead into a pocket of granulation tissue, the wall of which was made up largely from a loop of jejunum. Another open sinus from the gall bladder formed a connection with this abscess cavity. Cholecystectomy was made and two feet of the jejunum, comprising the infiltrated and infected abscess wall, were resected.

After completing the intra-abdominal work in these three cases, extensive dissections of the abdominal wall were made before sufficient overlapping of fasciæ could be obtained to give some reasonable hope for permanent cures of the herniæ. In spite of all effort it was evident in

all three cases that the main holding sutures were under considerable tension, even when the patient was narcotized. Experienced surgeons will understand readily the possibilities for regurgitation and overdistension under these conditions. Some may even remember instances when the postoperative straining caused serious damage to the wound and nullified the expected success of the operation. Gastrostomy was made in each of these cases and there was neither distension nor emesis after the operation. The entire period of recovery was uneventful.

UMBILICAL HERNIA

CASE XXIII. Woman, 69, had had an umbilical hernia of large size and long duration. After the incarcerated hernial contents, consisting of omentum, colon, and several loops of small intestine, had been liberated, it was extremely difficult to replace them into the abdomen because of their volume and because of the decreased abdominal capacity, which often accompanies large hernial protrusions of long standing. After finally succeeding in closing the hernia, gastrostomy was made. The postoperative troubles from distension were minimal.

OPERATIONS ON THE BILIARY TRACT

CASE XXIV. Woman, 65, had had several attacks of biliary colic with jaundice, last attack beginning two months before operation; whole body bronzed from increasing jaundice; patient very ill from cholemia. At operation gall bladder found obliterated in center of dense matting of adhesions; ducts greatly dilated from one large stone behind duodenum; complete occlusion of common duct. Choledochoduodenostomy and gastrostomy made. Large amount of bile escaped from gastrostomy tube for six days. The gastric secretion had become normal when the tube came out on the ninth day. Patient made good recovery without distension, nausea, or other complications so often encountered under similar conditions.

CASE XXV. Male, 38, had had a cholecystectomy at a previous operation and was suffering from recurring attacks of pain associated with fever and jaundice. He had frequent emesis, almost constant nausea, and showed marked emaciation. At operation the pancreas was found enlarged, the common duct distended and edematous, but without stones. A choledochoduodenostomy was made. There was a marked anemic and icteric appearance of the sutured structures and much concern was felt in regard to prompt and safe healing. The fact

that regurgitation and emesis had become habitual with the patient gave further emphasis to our anxiety. Prophylactic gastrostomy was therefore made. Bile soon began to flow freely from the gastrostomy tube and continued to do so for several days. There was no distension, no retching, and no vomiting. Healing was practically symptom free; the jaundice cleared rapidly and the recovery apparently was permanent.

CASE XXVI. Woman, 47, was operated on for common duct obstruction and jaundice. A cholecystectomy had been made two years previously, and this had been followed by a very stormy recovery. Operative findings: Pylorus and duodenum firmly adherent to under surface of liver; pancreas enlarged; hepatic and common ducts dilated, contained stones; common duct stenosed in duodenal wall. Operation: Choledochoduodenostomy; omental flap sutured over all raw surfaces on stomach and duodenum; gastrostomy. Results: Bile and black liquids with strong fecal odor escaped through the tube in large quantities for four days. The patient had no nausea or emesis and convalesced with a minimum of discomfort.

CASE XXVII. Female, 47, was operated on for recurrent jaundice following operation one year previously for stones in gall bladder and ducts. The postoperative recovery after the former operation had been associated with gas distension, emesis, lavages, etc., for many days. Extensive adhesions were separated, choledochoduodenostomy was made, followed by gastrostomy. The recovery was easy and free from all the distress which followed her former, a much simpler, operation.

CASE XXVIII. Female, 29, was found at operation to have a fistula between the gall bladder and the duodenum following an old perforative cholecystitis. The repair required the excision of a rather large section of the duodenal wall, which left a very feeble and unsatisfactory suture line in the duodenum. Therefore, gastrostomy was made as a precaution against postoperative overdistension. There was a profuse biliary discharge from the tube for several days, but the patient was comfortable and the recovery prompt.

CASE XXIX was a 57 year old lady with chronic cholecystitis and extensive adhesions about duodenum, pylorus, and subhepatic region. Cholecystectomy, pyloroplasty, plastic omentopexy, and gastrostomy were made. The hospital record reads, "No postoperative reaction, uncomplicated recovery."

CASE XXX. Woman, 50, had a cholecystectomy, gastroenterostomy, and gastrostomy performed for cholecystitis and duodenal ulcer with adhesions extending over the pylorus and stomach. Again the hospital record states, "No post-operative reaction."

CASE XXXI. Female, 55, with acute cholecystitis. Cholecystectomy made. Pulmonary infection, regurgitation, and alarming emesis followed the operation. Gastrostomy was not made until the *third* day. The patient died. It was believed that if gastrostomy had been done at the time of the primary operation, the patient's life would have been saved.

CASE XXXII. Female, 47, was operated on for cholelithiasis with chronic jaundice. Stones were removed from the gall bladder and hepatic duct; common duct was contracted and impervious to probing. Gall bladder was anastomosed to the stomach and gastrostomy made. This patient died from postoperative pneumonia.

GUNSHOT WOUND

CASE XXXIII. Man, 45, was shot in the left thorax with a revolver, the bullet perforating the splenic flexure of the colon. There was a beginning peritonitis and much abdominal distension. After closing the wound in the colon and draining the infected peritoneum gastrostomy was made. The distension subsided early, emesis was absent, and recovery rapid.

CARCINOMA OF STOMACH

CASE XXXIV. Female, 55. Gastrostomy was made after pylorotomy and posterior gastroenterostomy for carcinoma at the pylorus. Her postoperative recovery was comparatively free from symptoms.

INTESTINAL OBSTRUCTION

CASE XXXV was a female, 28, suffering from an enormous dilatation of the duodenum due to an ileus at the duodenojejunal junction caused by adhesions following a previous laparotomy. The second and third portions of the duodenum corresponding to the pyloric half of the stomach, both in volume and in thickness of walls. Duodenojejunostomy was made, together with extensive liberations of adhesions and plastic closures of the serosa. Serious distension and regurgitation followed. Gastrostomy was performed, not at the time of operation as it should have been, but on the *fourth* day. The relief was too late. The patient died from intestinal toxemia. We are convinced from later

experience that if gastrostomy had been made at the time of operation, recovery would have followed.

CASE XXXVI. Male, 59, (the writer) was operated on for intestinal obstruction and cholelithiasis. Extensive adhesions following a previous laparotomy required handling of the entire intestinal tract with suturing of several areas of denuded serosa. Cholecystectomy was also made and in addition, gastrostomy. Although intestinal paresis followed the operation and lasted several days, the patient did not suffer seriously from intestinal toxemia. The regurgitating intestinal contents escaped freely through the gastrostomy tube until peristalsis was reestablished. It was the consensus of opinion among the surgeons in charge that the patient owed his recovery to the presence of the safety valve now under discussion.

CASE XXXVII. Male, 53, operated on for strangulated hernia in an old right rectus scar after an appendectomy twenty years earlier. Distension, regurgitation, and emesis followed. Enterostomy and gastrostomy were made on the *sixth* day after operation, but the patient died from paralytic ileus and intestinal toxemia. A prophylactic gastrostomy did not seem indicated at the primary operation, but had it been done at that time, the patient would have had a much better chance for his life.

CASE XXXVIII was a 69 year old man with an intestinal obstruction of four days standing. He was too ill for radical operation. Colostomy and gastrostomy were made. He died of uremia on the fourth day.

DUODENAL DIVERTICULA

CASES XXXIX and XL. Females, 34 and 43, were operated on for duodenal diverticula. The diverticulum in each case was located posteriorly and closely attached to the pancreas. Because of the difficult location, it was uncertain after removing the mucous membrane pouch whether the opening had been closed properly, and fear was entertained that postoperative overdistension might produce leakage and infection. Gastrostomy, therefore, was made in each case, and both the immediate reactions and the final results were gratifying.

VISCEROPTOSIS

CASES XLI to XLVII (inclusive). The last seven cases in this series were in patients who were operated on for various types of visceroptosis. Four were females and three males, their

ages ranging from 20 to 32. Duodenojejunos-
tomy was made in six of the seven. In addition,
a number of other forms of technic were fol-
lowed out, such as gastropexy, pyloroplasty,
colofixation, omental grafting, and various plas-
tic reconstructions of the abnormal peritoneum.
The gastrostomy tube was passed through the
pylorus and into the duodenum in some of these
cases in order to make sure of a complete and
constant duodenal relaxation. An opening on
the side of the tube provided for the gastric
evacuation.

It is admitted that most of these patients might
have recovered from their operation without
the application of prophylactic gastrostomy.
However, if this method had not been used, the
multiple forms of technic which were practiced
on a number of the patients could not have been
done as one stage operations without running
unwarranted hazards with life. The compara-
tive freedom from postoperative pain and dis-
tress has not been the least of its recommenda-
tions. In no case has this complementary pro-
cedure appeared to be an additional operative
risk, but quite the contrary.

The majority of the patients have been "fol-
lowed up" since leaving the hospital. Up to
date no late symptoms due to perigastric ad-
hesions at the site of the gastric drainage have
been found in any of the patients, the first of
whom was operated on three and one half years
ago.

The liquid discharged from the gastrostomy
tube, in all cases which had operations on the
stomach and duodenum, showed that no post-
operative bleeding had taken place from any of
the visceral suture lines. We believe that it is
justifiable to assume that the quiet rest given to
the operated area by keeping the stomach and
duodenum empty and collapsed had a favorable
influence in the maintenance of perfect hemo-
stasis. Under former methods, when distension
sometimes followed operation on the stomach,
it was not uncommon to see some blood stains in
the vomitus even two or three days after opera-
tion. Although the number of operations is too
small to warrant any general conclusions, it is,
nevertheless, worthy of note that inquiry has
failed to reveal any symptoms of peptic ulcer
among those who had gastric operations.

What influence this technic may have in the
prevention of paralytic ileus cannot be stated
definitely, but it should be noted that no patient
died from paralytic ileus when the gastrostomy
was made at the time of the main operation. In

the two deaths in this series which could be
definitely ascribed to this cause, the patients did
not have gastrostomy done until after the ileus
had already become established and threatening
to the patient's life.

Haberland, of Köln, in an article in this
month's number, May, 1930, of "der Chirurg"
urges gastrostomy immediately on the first ap-
pearance of paralytic ileus, and before gas dis-
tension has caused serious damage to the gas-
tric and intestinal walls. Gastrostomy, accord-
ing to his opinion and experience, offers the pa-
tient a better chance for life than any other
form of treatment in paralytic ileus.

This prophylactic method had been so uni-
formly satisfactory in our experience that we
almost overlooked the possibility of any con-
traindications to its application. One observa-
tion was made which should be recorded, how-
ever, because it brings to attention not only an
undiagnosed lesion in the abdomen, but also an
unexpected complication after gastrostomy. The
facts in the case point to a definite contraindica-
tion.

In case XXI, recorded above, an unexplained
tumor mass was palpated near the pylorus. It
was assumed at the time that it was due entirely
to a matting of adhesions in the subhepatic space,
following the previous infection and operation
on the biliary tract. The postoperative recov-
ery of the patient was very satisfactory after
the ventral herniotomy. However, there was a
slight leakage for a few days after the removal
of the gastrostomy tube and the sinus did not
heal as promptly as in other cases. The patient
went home, but returned after three months
with the history that soon after leaving the hos-
pital, serious gastric symptoms had developed.
He had become unable to eat anything but liquids
and he had lost much in weight. In the skin at
the place where the gastrostomy tube had been
was a hard granulating nodule which on section-
ing was found to be carcinoma. The tumor
palpated at the operation proved later to be a
carcinoma near the pyloric end of the stomach
from which death followed in a few weeks.
Cancer cells present in the stomach had found
their way into the gastrostomy sinus and trav-
elled its entire length. This object lesson is
worth remembering when questions of malig-
nancy are pending.

Prophylactic gastrostomy has been found in
our experience to be a safe, simple, and life-
saving procedure. Its technic and usefulness
should be known to every medical man who may

be called upon to perform emergency laparotomies for any cause. It recommends itself even more to the occasional operator than to the experienced and expert surgeon, because the postoperative course of the patient is likely to be more uneven and distressing at the hands of the former than under the management of the latter.

DISCUSSION

DR. EDWARD L. TUOHY (Duluth, Minn.): I should like to ask Dr. Quain a question pertaining to this problem. Obviously his results have been very good, but tied up with this matter of postoperative vomiting is that very subtle matter that is the forerunner of acute dilatation of the stomach and associated states in the upper abdomen.

I can see that by preventing the accumulation of contents in the stomach, in a measure you prevent the loss in the body of that extremely vital set of substances that deal primarily with dehydration and with that basic thing.

I am not a surgeon but I have had contact with much surgery. I have noticed in the last few years tremendous advances taking place, both in preventing dehydration of the patient and preventing the loss from the body of this set of substances which control acid base equilibrium. In the case of postoperative vomiting from the stomach, the vital loss is the substances which maintain acidity.

It is clearly known now that by giving enough saline to replace the chloride loss and giving glucose in order to permit the breakdown of substances in carbonic acid which maintain the acidity of the blood, the shift toward alkalosis is stopped. It seems to me that we do not begin to see damage postoperatively as we did before this matter of glucose and saline was so freely used.

I grant you that one might not have to use so much glucose and saline if one could prevent this regurgitation into the stomach, because as soon as the material gathers in the stomach, it develops its concentration and the osmotic pressure continues to suck it out of the blood into the viscera. If that material is not allowed to accumulate, there will not be the same suction.

The same problem obtains in intestinal obstruction. One wonders, however, whether in a great many instances you would not accomplish the same purpose by the early institution of intravenous glucose and saline before the individual has begun the vicious circle, which, in all truth, has terminated the lives of many subjects, on the determination of alkalosis base.

DR. M. C. JOHNSTON (Aberdeen, S. D.): I should like to ask one question, whether Dr. Quain has found it necessary to do enterostomies or cholecystostomies?

DR. QUAIN (closing): What we are after is to prevent the beginning of dilatation of the stomach. I don't believe that any perfection of physiological chemistry will prevent regurgitation, vomiting and dilatation of the stomach and intestines in some of our postoperative patients, to say nothing of the

many emergencies we meet from time to time. My feeling is that inasmuch as the intestine and the stomach are trying to throw off this obnoxious material by emesis, we should lend our encouragement in getting rid of it. Our experience tends to prove this. I look upon gastrostomy as a means to make antiperistalsis effective. By so doing the upper part of the small intestine, at least, and the stomach are able to evacuate themselves and overdistension is prevented. Overdistension of an intestinal loop is the first step in paralytic ileus. When this condition is once definitely established, all treatments usually are useless. Of course, the extra fluids, the saline and the glucose must be provided, but beyond that I do not believe our knowledge warrants us, on a theoretical basis, to go. Up to this point we feel that we are aiding nature.

The avoidance of the stomach tube in postoperative patients was one of the main reasons, originally, for adopting this method. I tried to pass the tube on myself several times and found that my throat was too sensitive, even to a small duodenal tube, and I was not surprised that many patients objected strenuously to the stomach tube.

I believe the question of paralytic ileus would be simplified if prophylactic gastrostomy were practiced generally. Dr. Haberland, whose diagnostic ability is one of the highest type, urges gastrostomy when the first sign of paralytic ileus is noted.

To Dr. Johnson I may say that we have not found enterostomy or cholecystostomy necessary after doing prophylactic gastrostomy.

PSITTACOSIS

The picture presented by the case of psittacosis reported by T. M. RIVERS, BERNARD BENJAMIN and G. P. BERRY, New York (*Journal A. M. A.*, Aug. 23, 1930), was typical. The onset of the illness and the general appearance of the patient reminded one of a mild attack of yellow fever in which jaundice and bleeding are absent. (Some have likened it to typhoid.) Nevertheless, the important observation on physical examination is a consolidation of the lungs. The chief symptoms were severe and persistent headache, backache, and abdominal discomfort caused by distension. The tongue was covered with a peculiar heavy white coat that endured for more than two weeks. From the chart it is obvious that there was a disproportion between the pulse and the temperature. The most striking feature of the disease was the fact that, in spite of the marked involvement of the left lung, no symptoms referable to the chest occurred. There was no increase in rate of respiration, no pain on breathing, very little cough, and no expectoration except on two occasions. The results of their work in connection with the case reported at this time serve to emphasize the fact that the etiologic agent of psittacosis is neither Nocard's bacillus nor any other ordinary bacterium. Moreover, it appears that the white mouse may serve as a suitable animal for diagnostic purposes. Thus, in many instances, a laboratory diagnosis that ordinarily would be unfeasible will become possible. Finally, it has been shown that the virus of psittacosis is in the sputum of individuals with involvement of the lungs, and this fact should be borne in mind by those who care for these patients.

PROTECTIVE MENINGITIS

BY C. D'A WRIGHT, M.D.

MINNEAPOLIS, MINNESOTA

The constant difficulty presenting in diagnosis of protective meningitis, from meningitis, either exudative or suppurative which involves the whole system, is so often of vital importance that a few words in diagnosis of protective meningitis may be useful. The surgical treatment has not been included in this study except in cases of lateral sinus thrombosis.

Protective meningitis is rather a misleading name; it really means a protective (or walling off) inflammation of a small portion of the dura *outside the subarachnoid spaces*.

1. Protective meningitis, which includes:
 - a. Sinus thrombophlebitis,
 - b. Brain abscess, and,
 - c. Gradenigo's syndrome.

Sinus thrombophlebitis may be divided into 3 classes: (under this head today we include direct bulb thrombophlebitis which may come from a dehiscence in the tympanic floor; from direct extension of the carotid plexus of the middle ear to the bulb and from the middle ear by a suppurative labyrinth through the internal auditory vein).

(a) Fulminating cases with non-hemolytic bacteremia; (b) cases where the bacteremia is a hemolytic streptococcus; and (c) cases, more chronic and less severe where the blood stream may or may not carry less virulent bacillus.

Cardinal clinical symptoms of sinus thrombophlebitis are: temperature, sweats, prostration, irritable stomach, changes in the normal blood picture and the spinal fluid, head pain, progressive prostration, petechial hemorrhage and metastatic suppuration.¹

We distinguish cases of class "a" by the early, continuous high temperature, general severe systemic toxemia and positive blood.

Class "b" cases are easily differentiated even by the red blood count and the reading of the hemoglobin, if no further laboratory help were available. The history shows chills, high temperature, sweats, remission of temperature, progressive prostration and the red blood count gets lower and the hemoglobin lower as the red blood cells are destroyed by hemolysis.

Class "c" cases are clinically more like class "b" except that they are less severe and slower

of progress and the red blood cells and hemoglobin may stay about normal.

Griesinger's sign is of doubtful value as it is present in minor conditions. The Crow Beck reaction to pressure is not often obtainable. Palpation of the jugular is misleading as it is the lymphatics we palpate and these are often indurated even with otitis media. Edema of the papillæ is a valuable sign when present. It means a protective meningeal inflammation. Avellis' syndrome of the lower spinal nerve pressure is very rarely present, only in cases of jugular bulb involvement. Delirium, complicating, strongly suggests meningitis, at which point spinal fluid analysis may help us.

Ayer—Tobey sign—"Monometric tests for lateral sinus thrombosis: Pressure of the internal jugular on the sound side produces prompt rise of the spinal fluid in the nonometric tube to two or three times the initial reading."²

When the infected emboli go to the lung, there may be infection of the pulmonary circulation only, other foci being otherwise walled off and not producing general blood stream infection. Lung abscesses follow rapidly. (Case No. 1.)

During mastoid operation, excessive hemorrhage, thrombosis of the mastoid emissaries, change of color of the sinus dura, doughy feeling on touching the sinus, diseases of the sinus wall, perisinus abscess and, finally, aspiration of the sinus may suggest or prove lateral sinus thrombophlebitis.

Opening the lateral sinus is accomplished easily, just behind the knee of the sinus. Surgeons with a delicate touch experience no trouble and encounter little danger in the procedure. For the beginner, the drill may be safer, opening just above a line drawn from the top of the external auditory canal to the occipital protuberance.

Of course, the internal jugular is first tied off. The jugular is easily ligated (with the facial vein for a guide) after opening the carotid sheath. Years ago I always sewed the vein in the neck wound and used it as a drainage tube. Bacon and Saunders in their recent manual advise also tying off the superior thyroid and facial vein.³

After the sinus is exposed, it is incised. Three iodoform roll packs being ready for packing. When there is absolute thrombosis, there is, of course, no bleeding. With mural thrombosis there is free hemorrhage. In either event, when the sinus is cleared it is packed with three stay tampons.

The entire clot is not necessarily removed in cases of Class 3.

Also remove all the diseased tissue in the middle ear and its adnexa. "Removal of extrameningeal pus, perfect rest, promotion of excretion of toxic products, colonic irrigation, the increase of fluid intake in cases not too prostrated, are desirable. Hypodermoclysis is used after operation for unusual prostration. And rectal tidal flow for nutrition (of plain glucose) in cases of irritable stomach is good."⁴ Curette or suction are both allowable in removing the sinus clot. Much transfusion of properly typed blood is of great value in the hemolytic type and early surgical procedure is of great importance in all classes.

Brain abscess. We will consider under two heads; (a) Cerebral and cerebellar. The old clinical symptoms of cerebral abscess still hold reasonably good. There was slight chill, loss of appetite, coated tongue, and very soon and constantly we found after the chill some headache and general vomiting, which was somewhat like the syndrome of migraine.

Later the pain would be felt only when the head was moved or jarred. There was dizziness, though not excessive. The pulse generally became slow. Optic nerve changes occurred, from mild edema to what was then disc. The patient often was in somewhat of a mild stupor and the temperature was particularly diagnostic, being up and down, frequently subnormal. Difficulty of speech or peculiarities of speech were noticed and studied somewhat blindly. Motor disturbances of the face and eyes, occasionally anisocoria, were present and in the early days I have noticed delirium when it came would be rather of the "happy" sort. With this train of symptoms following an otitis media, with or without mastoid disease, we diagnosed cerebral abscess.

The old mind picture of cerebellar abscess was not nearly as well defined as cerebral abscess. We were aware that cerebellar abscess followed more often suppurative labyrinth or sinus thrombosis and, when dealing with deep infections following these two lesions, we were

predisposed to assume that the abscess would occur in the cerebellar fossa.

Observation then gave us varying grades of optic nerve disturbances, from slight edema to papilledema, as a complicating symptom. We saw nystagmus, dilated unequal pupils, some external ophthalmoplegias, and incoördination of the muscles of the arm and leg on the side of the infection, and what was then termed "cerebellar ataxia." It was observed that at first there was some occipital tenderness and rigid neck. We noticed often that the pulse was slow and that there was lack of muscular tone and strength, and often rapid reduction in weight. We also observed that the patient would lie in bed on one side only and curled up. Speech, similar to that which characterized disseminating sclerosis, was noticed. Abolishment of the corneal reflex was observed. Also convulsions, followed by dissolution. It was observed that, in the early part of the disease, symptoms would appear, disappear and re-appear.

Later when the abscess did not stay encapsulated, but ruptured, there was increased temperature and convulsions, followed by coma and dissolution.

Next we came to exclude suppuration of the labyrinth by crude labyrinthine tests and if the hearing was good we believed that the lesion was a cerebellar abscess if there had been a lateral sinus or small vein thrombosis.

Since then advance has been made in the diagnosis of both cerebral and cerebellar abscesses.

Cerebral abscess today: The old clinical picture, with the cerebrospinal fluid giving an increase in globulin and a high cell count would be fairly conclusive of cerebral abscess today.

"Tempero sphenoidal abscess gives some rather special symptoms. Homonymous hemianopsia from involvement of the tract which runs from the optic center in the cuneus through the temperosphenoidal lobæ to the geniculate body."⁵

"Aphasia when the left side is the seat of the lesion in a right-handed person, face palsy of a supernuclear type which involves only the lower two-thirds of the face, also ptosis and pupillary phenomena."⁶

"The pupil phenomena are often first homolateral contraction of the pupil from irritation. Later dilatation of both pupils, or of one more than the other (anisocoria). When the pupils are unequal, it is interesting to designate which, if either, is normal in reaction.

When the pupils are unequal it is necessary,

first, to designate which is the normal pupil. This is a simple procedure. Measure the pupils and drop one drop of a 5 per cent solution of cocaine in each eye. Now, when a drop of 5 per cent solution of cocaine is placed in an eye, one of three things occurs: either there is no dilation, or a very excessive dilation or a normal (medium) dilation.

When the instillation is followed by a normal dilation, that pupil is normal; in aniscoria one will show either no dilation or excessive dilation and that one is pathologic.

The following formulæ for pupil diagnosis are useful:

If the large pupil (5 per cent solution of cocaine) shows no dilation there is excitation of the dilator fiber.

If the large pupil (5 per cent solution of cocaine) shows very great dilation there is paresis of the third nerve.

If the large pupil (5 per cent solution of cocaine) shows normal dilation this pupil is normal.

If the small pupil (5 per cent solution of cocaine) shows no dilation there is paralysis of the dilator fibers.

If the small pupil (5 per cent solution of cocaine) shows mild dilation it is normal.

If the small pupil (5 per cent solution of cocaine) shows no dilation use a 1 per cent atropine solution, and if no dilation there is paralysis of the sympathetic, as in tabes.

If adrenalin solution produces mydriasis in myosis there is lesion of the sympathetic nerve.

Both pupils may be absolutely paretic to light and accommodation. This points to cerebral lues rather than to tabes or progressive paralysis, where iridoplegias are more common.

Convergence often shows some pupillary reaction, to the careful observer, where there is marked myosis.⁷⁷

Toxic delirium may be mistaken for delirium of suppurative meningitis. The external ophthalmoplegias found with suppurative meningitis are not symptomatic of cerebral abscess.

Dry posterior horn of the lateral ventricle on the diseased side when the other horn is wet, is a symptom of value.

Muscular weakness of the face, first shown when under excitement and gradually becoming a paresis and later a paralysis of the super-nuclear type, (not including the eyelids, as does pressure of the seventh nerve,) followed later by paralysis of the arm and leg, is of extreme value when present.

"Temporal sphenoidal abscess is situated about an inch above the tegmen in or near the second temporal convolution, which, being a silent area, fails to produce outstanding localizing symptoms, especially when the abscess is not on the right side."⁸

Localizing of temporal sphenoidal abscess by the study of naming aphasia is not reliable. These aphasias are usually subcortical but from the pressure of the localized pia arachnoid abscess may be cortical. (Others concurring in this opinion.)⁹

In the left-sided abscesses, word deafness is seldom present if the patient is right-handed.

Logically, only abscesses in both lobes should produce naming aphasias.

In cerebral abscesses no spontaneous nystagmus is seen. There may be a lateral deviation of the eyes.

"In hysteria, with otitis media, many symptoms of brain diseases may be present. The anesthetic areas are always ipsilateral. Uremia states, where there is chronic otitis, give a clinical picture of brain invasion, and in these cases spinal puncture is of great diagnostic value."¹⁰

"It must be remembered that in children acute otitis media, with or without mastoiditis, and with no brain lesion, may give choked discs, headache, nystagmus, vomiting, vertigo, and facial paralysis."¹¹

CEREBELLAR ABSCESSSES

The differentiation of cerebellar abscess is made partly by exclusion of temporal sphenoidal abscess and by the history of its recognized antecedents, that is, suppurative labyrinthitis or sinus thrombophlebitis, coupled with the symptoms of posterior brain fossa pressure and the syndrome of brain stem involvement.

These symptoms are spontaneous, vertical, or aberrant nystagmus, external ophthalmoplegia, pupil phenomena, (eyes held in lateral deviation away from the side of the lesion to lessen the sweep of the quick component) homolateral incoördination or hemiparesis of the arm or leg, or both.

There is often rigid neck, altered knee jerk, gapping, vomiting and rapid loss of flesh. Loss of strength, unsteadiness and lack of muscular inhibition are present.

The turning dizziness ataxias of cerebellar abscess is not in keeping with any rule.

Conjugate ocular palsies, curled up side position while lying in bed, scanning speech, adiodokokenesis, Oppenheim's syndrome, papillo-

dema, Avellis' syndrome, from pressure on the 9th, 10th, and 11th cranial nerves, tongue deviation from pressure on the 12th cranial nerve, patency of both lateral ventricles, increased pressure and quality of spinal fluid together with the vestibular tests are to be looked for in cerebellar abscess.

Relief of pressure from dehydration by the use of magnesium sulphate should be remembered.

GRADENIGO'S SYNDROME

Gradenigo first described his symptom-complex of homolateral abducens paralysis, head pain, and otitis media, in the early part of this century. He reported some 60 cases collected and seen.

The paralysis is due to the pressure on the 6th nerve in Dorello's canal. Pain is due to involvement of the Gasserian ganglion-symptom of deep otitic infection. Diplopia is often the first subjective symptom. Simple mastoid operation in acute otitis, and radical mastoid operation in chronic otitis is indicated to lessen risk of further cranial involvement.

The syndrome results from a protective meningitis.

The writer has seen six cases; one, 14 years before the syndrome was standardized. Case No. 2.

In extradural abscess the pus is generally between the tympanic roof and the dura or when it comes from the extension from the mastoid cells it generally locates itself about the sigmoid sinus. It is peculiar in that it generally is found by pus showing through the tympanic roof or the removal of necrosed bone in the roof exposes the suppuration; also, in that it is more frequently present in chronic otitis than in acute and more liable to occur in young people than in grown-ups.

When the discharge suddenly ceases in otitis media coincident with symptoms of meningeal irritation, one must at once think of extradural abscess.

Finding of an extradural abscess during any operation when uncertain brain symptoms present, strongly suggest brain abscess. Osteomyelitis of the temporal bone, mastoiditis with labyrinthitis, or sinus thrombosis are often precursors of brain abscess. Readjustment of the brain's protective efforts (to clear up the picture of a protective meningitis nearing the border line of true meningitis) are often successful after mastoid operation, and many think a case

of true meningitis, complicating mastoiditis, has been cured, but such, however, is not the case. (Case No. 3.)

Extension of infection to the dura may go directly through the perivascular spaces of the cerebro-spinal system as well as by way of retrograde sinus thrombosis or direct extension of the original suppuration.

It must be borne in mind that protective meningitis may produce external ophthalmoplegias, especially the ipsilateral abducens paralysis, by way of the basal cisterna which it traverses (see Gradenigo's syndrome). Extra-dural abscess may cause papilledema and severe cerebral and constitutional symptoms. Extra-dural abscess between bone and dura give few symptoms and is easily controlled.

When exudate occurs in the spinal cord there is generally found some occipital and spinal tenderness. Kernig's sign is present if there is basalar involvement and it is an early sign.

The head pain in meningitis is agonizing and it is often accompanied by a characteristic sharp cry not characteristic in any of the other deep infections. Cheyne Stokes respiration is characteristic.

Often there is slight optic edema and rarely when there is internal obstructive hydrocephalus, papilloedema shows. Pupils are often equally sluggish. Sometimes they are widely dilated and not responsive to light which is taken by some to mean involvement of the nerve from exudate in the basal cisterna.

The third, fourth and sixth nerves are often involved early and Gradenigo's syndrome may present itself when meningitis originates from deep cell suppuration.

Extensive effusion in the internal auditory meatus may cause total or partial deafness; also cessation of the vestibular reactivity. Spontaneous nystagmus is often present. Inability to swallow from a late bulbar paralysis is often a late symptom. From hemorrhage in the pia-arachnoid which occurs early in fulmination cases and late in exudative cases, convulsions and localized motor paralyzes occur.

General cyanosis from multiple septic lung infarcts is observed as a late symptom. (Case No. 1.)

It is quite possible that the fifth and sixth nerve irritation occurring early in meningitis may be due to congestion of the base with no sepsis. In these cases simple mastoiditis often clears up the picture. Involvement of the fifth nerve generally means infection. The writer

has not seen a case of fifth nerve pain in meningitis from irritation when there was not positive spesis present.

Delirium as contrasted with delirium in sinus thrombosis will be violent and long continued.

BLOOD STUDY

Red cell count and estimation of hemoglobin are of value in cases where the hemolytic organism is present. Repeated tests tell us the virulence of the attack; whether surgery had been sufficient to stop the process; and when to start and how often to use surgery.

When the hemoglobin goes to 50 per cent or below during hemolytic organism infection, whole blood transfusion is indicated to supply antibacterial elements and to restore hemoglobin. In anemia, pre-operative transfusion is valuable.

The severity of an infection is very definitely indicated by the increase in the polynuclear count.

The leucocyte count tells the systemic resistance present against infection.

"It is not the number but the ratio; the polynuclear indicate the amount of toxic material absorbed, the leucocytes tell how the body forces are meeting the toxic products absorbed."¹²

When the blood contains organisms the culture is often negative. Blood for cultures should be taken at the height of an exacerbation. Much technique in blood plates is not good.

Bacteria may be killed off in the blood or escape into the lungs, or form a walled off focus and not get into the general circulation. The writer has found positive blood cultures in 50 per cent of cases where they must have existed.

SPINAL FLUID

In protective meningitis, which includes lateral sinus thrombosis, dural and brain abscesses, and probably Grandenigo's syndrome, there will be increased pressure with some albumen. The fluid will be cloudy; globulin will be present.

Copper reduction will be present. Choline absent. There will be a large increase in cell count. Poylnuclears predominate. As the danger line recedes, these will be replaced by mononuclear lymphocytes.

In cases where tentative diagnosis of protective meningitis is made, if observation of the spinal fluid shows organisms that thrive on carbohydrates and copper reduction is entirely absent, or if the organisms are of the putrefactive type and the destruction of lecithin gives choline in excess, we may very reasonably assume that

the protective meningitis has passed into meningitis proper. The presence of choline with no bacteria often first announces the change and invasion of the subarachnoid spaces (true meningitis).

FUNDUS CHANGES

In cerebral abscess the usual change is mild optic edema. Papilledema may result from acute venous stasis in cerebral abscess. When present in thrombophlebitis, it is a manifestation of protective meningitis; when present in meningitis, it is a manifestation of obstructive internal hydrocephalus. It occurs yet rarely in cerebellar abscess.

"Papilledema is an edema of the non-medullated portion of the papilla from pressure. The laminae bulge, and the edema first shows on the external side of the disc, where all layers of the retina appear at once. There is proliferation of the neuroglia. The medullated portion of the fibers later shows degeneration. Distension of the nerve sheath is common, the subarachnoid space being the one most generally affected. The edema of the nerve is usually interfascicular. The edema extends into the nerve fiber layer of the retina."¹³

"In papilledema inflammatory symptoms are limited more to the papilla, while the orbital nerve may be normal. The papilla is greatly swollen by accumulation of lymph and blood, and it projects out into the interior of the eye—mushroom-like—is thickened at its base, and gives actual tumefaction. The retina is pushed aside by the gorged optic nerve, extravasations of blood are found, also swelling of the nerve fibers and cellular infiltration along the blood vessels."¹⁴

Lepto-meningitis may give a true optic neuritis. One must remember that there is such free communication between the orbital and facial veins and that pressure on the cavernous sinus does not produce changes within the eye. Again, the subvaginal space around the optic nerve is continuous with the subdural space. Injection of the subdural space sometimes does produce choking of the disc. Fluid injected into the sheath of the nerve passes into the lymph spaces at the lamina cribrosa. This pressure in the nerve sometimes causes neuritis.

The way in which the mechanical pressure produces choked disc may vary in different cases. Intracranial pressure plays a great part in the mechanical variety, as is proven by the relief gained from decompression. From the upper bony edge of the intracranial canal there

projects a fold of dura into the roof of the canal. This dura sometimes presses on the nerve in cases of intracranial pressure. The pressure is circular and causes inhibition of conduction of peripheral nerve fibers. This, in turn, causes contraction or alteration of the normal visual field, and, if severe, later atrophy. The pressure above described leads to lymph stasis in the nerve sheath, also edema.

Differential diagnosis of brain abscess from:

1. Encephalitis lethargica is based principally on the diplopias, ocular nerve paralysis, muscular twitching, negative eye-grounds and negative spinal fluid found in encephalitis lethargica.
2. From meningitis by the high temperature of the latter and the characteristic spinal fluids of both.
3. From acute labyrinthitis by lost function of the labyrinth in labyrinthitis. In labyrinthitis signs of disfunction of the cerebellum never appear.

When labyrinthitis complicates cerebellar abscess the labyrinthine tests are our only hope of differentiation.

The excitability and irritability of meningitis is contrasted with composure and ease of the thrombophlebitis.

The sharp cry of meningitis accompanies no other deep infection.

* If when the spontaneous nystagmus is toward the diseased side and does not shift with varying positions of the head, and the tendency to fall does not depend upon the direction of the nystagmus, diagnosis of the cerebellar abscess may be made. Now, if in such a case, the nystagmus is toward the sound side and the direction of the fall tendency depends on that of the nystagmus, and varies with the position of the head and the patient lies on the sound side, the diagnosis of diffuse labyrinthine suppuration may be made. If these symptoms do not decrease in from two to five days (especially if the labyrinth had been operated upon), or if they increase, then we must assume intracranial lesion.

If there is cerebellar abscess with a normal labyrinth there will be spontaneous nystagmus on one side or the other, protean and often aberrant nystagmus. Spontaneous nystagmus may or may not show by looking straight forward through opaque glasses. Head jerks produce spontaneous nystagmus or increase the aberrant form present. Various combinations of equilibrium disturbances and vertigo are present; vomiting, position in bed generally determined

by the nystagmus; hearing is not lost; there may or may not be tinnitus. There is hyperirritability of the vestibular end organ; this is a very important symptom. Abberent nystagmus may be always presumed to be central origin.

"It must be remembered that symptoms of intracranial pressure may occur from protective meningitis, and nystagmus may result by meningitis or hemorrhage involving the internal meatus. Disturbance in hearing are more common in meningitis than in brain abscess."¹⁵

PAIN

Pain in lateral sinus thrombosis is generally not localized, rather vague, and not extremely severe at any time.

In cerebral involvement from middle ear and mastoid, pain is first localized above the ear across the temporal region.

In temporal sphenoidal abscess and extradural abscess, pain is generally in the temporal region. Pain from extra-dural abscess following mastoid disease is a severe, temporal, and generally nocturnal pain.¹⁶

Pain from cerebellar abscess is more diffuse and generally is not localized. Tenderness of the occiput is often present. When localized over the occiput, the symptom is valuable.

In involvement of the labyrinth, vestibular infection and even suppuration may cause pain somewhat similar to otitis media. When suppuration extends to the cochlea (in the few cases the writer has seen) the pain has been intensely severe and continuous.

"In meningitis, pain is not a symptom of great diagnostic value except in the fulminating variety. Fulminating meningitis, as a rule, follows acute otitis media with a coryza. It is ushered in by sudden agonizing pain in the head."^{16, 17}

Pain in protective meningitis is rather vague. It occurs as a mild headache. When, however, the protective reaction gives infection of the deep cells of the petrous pyramid through the labyrinth to the basal cisterna, there may follow an exhibition of Gradenigo's syndrome with pains in the homolateral, temporal, or trigeminus region, round or behind the eyes and the teeth.

Sudden death often follows spinal puncture when made with subtentorial lesions. Neurological findings carefully made will prevent this disaster.

Liberation of organisms from a localized infection or from the blood stream by withdrawal of spinal fluid in cases of protective meningitis

produces deeper infections at times. This is reduced to an extreme minimum if withdrawal is made very slowly and in very small amounts.

CASE REPORTS

CASE 1.—Case No. — white male, 7½ years old. Patient was referred to St. Mary's Hospital by Dr. John Hynes, who had recommended hospitalization several days before, March 19, 1929. Case was an overflow from the City Hospital.

History of the case showed that about March first he had pain in both ears which was quite severe. Both drums ruptured in a few days and there was purulent discharge. Patient had a slight cough which became worse and March 13, he had pain in the left side just above the hip. There was persistent discharge from the right ear and his temperature ranged from 103° to 106°. His past history was negative except for measles. Family history was negative. The case had been diagnosed as influenza with otitis media.

X-ray showed destruction of mastoid cells on the right side.

Mastoidectomy was done March 21, 1929, by Dr. P. A. Higbee. Right mastoid was necrotic and there was a small amount of free pus at the tip. The bony wall of the transverse sinus was also necrotic. A small part of the wall was uncovered during the operation. Immediately after the operation the child's symptoms were better.

I saw the case on March 23. There was high, irregular temperature varying from 96° to 105° in an hour and made a diagnosis of lateral or transverse sinus thrombophlebitis. Before operating I wanted a consultation with an internist to determine if there was any other cause for the irregular temperature except lateral sinus thrombosis. The internist's report was as follows.

"Conjunctiva pale; tongue, coated but moist; tonsils, large and pale; Neck, no rigidity; chest, heart, negative; pulse, good quality, 120 per min.; lungs, clear. Abdomen, spleen, easily palpable, otherwise negative; extremities, no Kernig, no Babinsky; external eye muscles apparently normal. From the examination I can find no definite evidence of lateral sinus thrombosis. Would suggest further careful observation with daily leucocyte counts. Also a flat plate (x-ray) of chest. No blood study had been made."

I felt that an operation must be done immediately if it were to be of any use, but after the internist's report I did not wish to operate until I had a consultation with Dr. J. Frank Corbett who concurred with me in the matter.

We at once tied off the internal jugular and opened and packed the sinus March 23, at night. He had a transfusion of 200 c.c. whole citrated blood from the mother.

Blood cultures were negative; urine showed albumin; leucocytes ran from 6,000 to 23,000 the day before patient died; pulse 95 to 125.

Just before death, March 26, he became very cyanotic.

Post-mortem examination showed the following:

Post-mortem findings: The peritoneal cavity negative; heart weighs 175 grams; the right auricle

dilated about three times the normal size; the left lung weighs 225 grams and is covered by a thick fibrinopurulent exudate. There are two small abscesses in the lower portion of the upper lobe; these show a large amount of hemorrhage and but a small amount of pus. On section large amounts of fluid and a small amount of pus can be expressed from the left lower lobe. The right lung weighs 325 grams. On section large amounts of both clear and bloody fluid can be expressed. Small amount of pus. Spleen weighs 125 grams. On section the follicles are very distinct. Liver weighs 950 grams. It shows no abnormalities. Gall bladder is negative.

Opening the cranial gave no evidence of meningitis. There is a localized patch of necrosis, measuring about 1.5 cm. in diameter, over the lobe of the cerebellum. The entire sigmoid portion of the transverse sinus is packed or thrombosed; this is the portion opened in the second operation made on the sinus.

The remaining cranial sinuses are normal.

Cultures of spleen contaminated but no hemolytic strep found.

Post-mortem diagnosis:

1. Right mastoiditis.
2. Transverse sinus thrombosis.
3. Diffuse suppuration of the right lung jugular vein.
4. Multiple abscesses of the left lung.
5. Early bronchopneumonia, both lungs.
6. Left empyema.

We did not wait for spinal fluid analysis, operating about three hours after I first saw the case. Chest being absolutely negative six hours before operation, March 23. Post-mortem report, made March 26, shows how rapidly complete lung involvement may follow when surgery of the sinus is late.

CASE 2.—Male, age 16 years, Nov. 3, 1892, brought to my office by mother who gave the symptoms that the child had been studying hard and for some days had suffered from very severe neuralgia. About the time the neuralgia began the eyes converged.

Examination showed convergence of the left eye. No note was made on the case history of paralysis of the external rectus though it probably was present. I advised the mother that the convergence and headaches were likely due to extreme farsight which, after being corrected, would give good prognosis. The child seemed to be far below the average in mentality. He had great ambition to be a minister of the gospel. I remember advising his mother to get him into some job where he might have a chance at least. I rather tried to discourage her giving him a theological education because of his deficient mentality.

Repeated refractions under atropine failed to show any refractive abnormality. Extensive reading failed to disclose to me why extreme neuralgia should produce convergent squint or sixth nerve paresis. Remember this was in 1892, some sixteen years before Gradenigo's paper.

The peculiar part of this case is that in 1922 this patient called on me, as he said, to prove to me that he was a clergyman, had a country church and

was filling the place well despite my discouragement.

Just before leaving my office he said, "By the way, do you think you could do anything to help the hearing of my left ear. It has been deaf from childhood. It discharged for a long time after measles or scarlet fever."

The examination disclosed old sclerosed mastoid and otitis media which had been quiescent through his life and, undoubtedly, was present at his first examination.

The external rectus was completely paralyzed yet. So thirty years after the first examination one entry was made on his history card, namely: Gradenigo's syndrome.

CASE 3.—A child, aged 9, hospitalized at St. Mary's hospital by the late Dr. James Dunn, in the fall of 1898, gave a history of right otitis media some years back, which healed entirely. Some days before I saw the patient the symptoms were fever, rigidity of the neck, increased deep reflexes, severe temporal headaches at night. The patient was very restless and cried out at night during sleep. A diagnosis of purulent meningitis had been made. As a doubtfully palpable jugular was present, Dr. Dunn allowed me to do a lateral sinus operation. The sinus was thrombosed and a very large extradural abscess was evacuated. The sinus was packed and the pus still continued to drain from the extradural abscess. At this time suppurative meningitis meant death, which was waited for expectantly. The child was placed on the right side so that the meninges might drain. This was one year after Sir Charles Ballance of London, than whom there has never been a keener observer, had first reported drainage of the meninges in suppurative meningitis by the occipital route.⁶ The patient persisted in recovering, we are somewhat elated over the case.

Of course, this was a case of extradural abscess with sinus thrombosis and protective meningitis, which latter meningitis we could not differentiate from general purulent meningitis at that time.

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ARE WE MISSING SOMETHING? WHAT ABOUT METABOLIC INFLUENCE ON CATARACT OPERATION HEALING?

Physical findings before cataract operation were as follows:

Miss B. P., age 68, height 65 inches, weight 132 pounds.

Head, ears, chest, heart, abdomen, G.U., skin, bones and joints negative. Neuro-muscular negative.

Eyes, both senile cataracts.

Submaxillary glands in neck questionably palpable.

Teeth, considerable repair work; recently gone over and in good condition.

Tongue coated. Tonsils atrophied from previous infection.

Lungs, no areas of dullness; normal breathing sounds and good lung excursion; occasional moist râle present at both bases.

Temperature, axilla 97.8. Pulse rate 80, character regular.

Respiration 18-20, regular and normal.

Wassermann negative.

Nutrition, well developed and well nourished.

This patient's friends had said that all her life she gave up easily to any discouragement and would absent herself from work from what was considered inconsequential indisposition. This was the only lead toward hypothyroidism exhibited and was charged to rather a slightly exaggerated, yet pleasing, femininity.

None of the syndrome of hyperthyroidism were observed, namely, retardation of development, ocular muscular insufficiencies, endogenous obesity, persistent constipation, subjective feeling of cold, lack of normal perspiration or history of day sleeping.

First operation, left eye, April 18, 1930. Vision, immediately following operation was as good as is usual. She had no reaction and no pain. Eye was opened on the seventh day and was perfectly healed. Enough soft substance had formed in the anterior chamber to materially interfere with vision. As the patient was thus left in darkness, a corneal section was made and the soft substance expressed on May 4. The eye was dressed and the third day showed good vision and a good result. On the fifth day a striped keratitis began which clouded the cornea and did not clear up.

The right eye was operated June 18. After the operation the patient had normal post-opera-

tive vision. There was no reaction and no pain. On the seventh day the eye was opened and soft substance had formed in this anterior chamber.

On account of the striped keratitis in the first eye, this soft substance was not extracted but was treated and absorbed except for a secondary cataract membrane completely covering the pupil. This membrane was needled on July 7 and after the needling with a plus 13 lens, the vision was gratifying.

Three days after this there was excessive lachrymation and a feeling of discomfort for a couple of hours during the third night. The ciliary region became sensitive; there was excessive lachrymation and ciliary congestion and a iridocyclitis followed. Whether it was sympathetic or not, I could not tell but k. p. was excessive and in a short time the anterior chamber was completely filled. The pupil was kept open by the use of atropine for two weeks after which time it contracted so that the iris gave very much the picture of a punctured wound of the anterior chamber.

This is the third case in which I have used foreign protein therapy and failed to get reaction in hypothyroidism. It seemed impossible to get an increased activity in the body cells.

In this case typhoid vaccine injections, intravenously, were increased until 8 minims (650 million bacteria) were given with no reaction.

Just before she left a basic was taken and it was —29.

The question naturally presents itself. Should we have a basic in every cataract patient as a part of routine examination? Is the unusual result following every surgical procedure in this case due to the hypothyroidism? Would she have done well had thyroid feeding been administered before the surgery was done? Is the reaction on the reticulo-endothelial system less in hypothyroids than in others? Is there less stimulation of the production of anti-bodies or anti-body exfoliation in hypothyroids than in others? Or, possibly, was the iridocyclitis in the right eye a surgical accident from corneal incision following the operation on the left, occurring as a sympathetic iridocyclitis?

This patient gave no reaction to any foreign protein.

The use of intravenous typhoid injections for primary or secondary uveitis, scleritis, choroiditis, trauma of the globe, and in general internal medical work, report of 2,500 cases, some 10,000 injections, by P. S. Hench, Division of Medicine, Mayo Clinic, July, 1930, and William L. Benedict, Department of Ophthalmology, Mayo

Clinic, 1928, the following contraindications for use of typhoid vaccine, intravenously, were noted:

1. Chronic alcoholism.
2. Pregnancy.
3. Hyperthyroidism.
4. States of exhaustion.
5. Chronic infections of long duration, with several infected sites.
6. Uncompensated vasomotor, vascular, cardiac, or renal diseases.
7. Hemophilia.
8. Tuberculosis of the lungs.
9. After operations, ten days should elapse.
10. Definite protein hypersensitivity.
11. Diabetic acidosis (except in cases of controlled diabetes, coexistent with arthritis).
12. Acute and decompensated cardiac disease.

Age, alone, is not a contraindication.

F. E. Burch recalls Bordley's enthusiasm over thyroid gland feeding in uveitis.

Thyroid extract feeding is being administered at this time.

C. D'A. WRIGHT

CONTROL OF BARBITAL ANESTHESIA AND POISONING BY DIURESIS

While using barbitalized dogs in some work on hyperglycemia, CARL A. JOHNSON, ARNO B. LUCKHARDT and J. A. LIGHTHILL, Chicago (*Journal A. M. A.*, Aug. 23, 1930), were struck by the apparent rapid recovery of these animals as compared with others not receiving large quantities of dextrose solution. This led to the use of diuretic measures in one clinical case of attempted suicide with barbital, and to the experimental work reported. A typical experiment consisted of a control experiment in which the recovery time was determined following the intravenous injection of 225 mg. of soluble barbital per kilogram. After an interval of from ten to twenty-four days the same dose of soluble barbital was given to the same dog and this was followed in one or two hours by 1 liter of 10 per cent dextrose solution given intravenously and the recovery time was noted. After another interval of from ten to twenty-four days a second control experiment similar to the first was performed in which soluble barbital was given without a subsequent intravenous injection of dextrose. Those dogs receiving 1 liter of 10 per cent dextrose solution following the barbital injection, the recovery time was reduced, in most dogs, to less than one half. Gower and Tatum suggested that, on the basis of the excretion of barbital in the urine, the most rational means of treatment of acute barbital poisoning is to maintain optimum renal function. The authors feel that their experimental work supplies proof for the usefulness of this method of treatment in cases of poisoning with barbital and other barbituric acid compounds.

CASE REPORTS*

By F. W. WITTICH, M.D.

MINNEAPOLIS, MINNESOTA

CASE 1. Air embolism following attempted pneumothorax.

Although this case dates back to August 15, 1919, it may be of some value in reminding those who are performing artificial pneumothorax that such things unexpectedly occur, and each year the literature contains reports of several cases and we know that modesty forbids others from being reported.

The patient, a man, age 39, laborer, gave a history of no tuberculosis in the family, no known exposure to tuberculosis, always healthy, never been ill with any serious illnesses, and appeared fairly strong and vigorous. He developed symptoms a few weeks prior to the above date of fatigue, mild cough, and spitting up approximately about one half pint of blood. There was nothing remarkable about the physical examination and apparently the disease had not been in the acute stage very long. Temperature 100.2°, pulse 88. Stereoscopic plates showed an extensive tuberculosis of the entire left lung with a moderate sized cavity in the upper lobe. There was no evidence of a recent or serious infiltration in the right lung. August 17, artificial pneumothorax was attempted. One per cent novocain was injected, followed by inserting the pneumothorax needle, when a negative pressure of -2 to -3 cm. of the water manometer was recorded with a small excursion. Although this was not a satisfactory reading, a small amount of air, about 25 c.c., was injected when the patient collapsed and looked as though he were dying. He immediately developed a spastic hemiplegia of the right side. At the same time a typical post-mortem like lividity developed over the left thorax and left arm. There was a sharp line of this gross mottling, bordered by a line corresponding with the left diaphragm and the mid-sternal line, covering the left chest front and back and shoulder and left arm. There was no other discoloration present. On feeling the pulse I am fairly sure I felt bubbles of air in the radial. There was distinct crepitation. He was unconscious for one hour, during which time some of the spasticity wore off. A week previous I noticed an article in the *J. A. M. A.* reporting a patient who had recovered and had some consolation. After about one hour he became conscious and was able to talk. We helped him to sit up and the whole thing recurred just as it had been before when we injected air. He fell back, became unconscious, developed the spastic condition on the right side. I called Dr. Hamilton, and his notes read:

"August 17, 1919. Seen at 3:25 P. M. Lying on back, right hand and arm in semiflexion, right leg in almost complete extension. Speaks with no evi-

dent difficulty. Mind is clear, B. P. 90/70. Pupils equal, circular, react normally to light and accommodation. External ocular movements normal. No diplopia or nystagmus. Fifth, seventh, eighth, tenth, eleventh and twelfth cranial nerves all normal. Articulation normal. Definite increase of muscle tonus in right upper and lower extremities, more marked in lower than upper. Performs all coarse movements with right arm, hand, leg, and foot with fair power and range, but when asked to button his clothes with the right hand he fumbles considerably and says that hand will not do what he wants it to. Sensibility normal in all right side for cotton touch, pin pricks, pressure, and joint movements. Vibration is normal in the right hand but a little impaired in the right foot. All deep reflexes of both sides are considerably increased, but the right not much more so than the left. There is no clonus, but the right foot shows a well sustained ankle clonus. Both plantars are unsatisfactory. The abdominal reflexes are very sluggish and equal on two sides. There are well marked spots of lividity still to be seen in left arm."

I put him on the rest cure at Hopewell Hospital. He was there for nearly a year. The right lung apparently did not become infected. March 19, 1921, I again attempted pneumothorax and obtained a partial collapse. He was then sent to the Glen Lake Sanatorium and they reported he died the following June of general extensive disease, the intestines also having become involved.

I have seen a number of cases reported every year since then by experienced phthisiotherapists, and do not think that this case was entirely due to poor operative procedure, and I have been lucky not to have any more. However, it is a complication that certainly is undesirable.

CASE 2. Pulmonary abscess or advanced pulmonary tuberculosis.

This man, age 45, has a brother who is an arrested case of tuberculosis in whom tubercle bacilli were found frequently before his recovery.

He became ill following an acute respiratory infection in October, 1928, and had spent the winter in Arizona. On his return he was first seen by me May 17, 1929. He was twenty-five pounds under weight, temperature 99°, pulse 98. He complained of shortness of breath, cough, and profuse expectoration of a thick, purulent material which did not contain tubercle bacilli. In his second sputum examination tubercle bacilli were reported found. Plates at that time showed an extensive involvement of the right lung with markedly thickened pleura and a cavity in the lower lobe posteriorly. After a reasonably short time his temperature and pulse became normal, but he complained of increased sputum. Repeated examinations of the sputum af-

*Read before the Minneapolis Clinical Club, April 17, 1930.

terwards showed numerous secondary organisms but no tubercle bacilli. Recently the increased expectoration has become so marked that the patient is very uncomfortable, although the temperature and pulse remain normal. More plates were taken recently by Dr. Allison who reported that this was possibly an extensive tuberculosis. As you will notice by the film the heart is drawn over to the right side, pleura is very much thickened, and all the physical signs of a cavity posterior at the base. He sent in a twenty-four hour specimen of sputum, as you see here, which is a pint of anchili sauce like sputum with some odor and is rather characteristic of an abscess. Dr. Floyd Grave was unable to find any "sulphur" granules on microscopic examination. The microscopic examination showed many pus cells, many long chain streptococci, few staphylococci, no tubercle bacilli were found and no actinomycosis. The albumin content of the sputum was two and one-half per cent at the end of twenty-four hours.

I found some small, short, highly refractile elastic fibres, uniform diameter, curled at the ends, which Osler points out is common from bronchial rather than pulmonary suppuration. There is a possibility that an error was made when tubercle bacilli were found on the one examination, and it may be now "closed" fibroid tuberculosis with a nontuberculous pulmonary suppuration in the lower lobes. If this represents a bronchiectasis I believe the albumin content and the elastic fibres would suggest multiple abscess formation as well. The question is whether thoracoplasty is indicated; bronchoscopic examination and drainage probably is indicated and further studies made. This man is to be hospitalized with these things in view.

DR. T. A. PEPPARD: Have you looked for Vincent's?

DR. WITTICH: Dr. Grave did not see any Vincent's organisms.

CASE 3. *Primary lung cancer.*

This man, age 65, was first seen by me December 31, 1929. States that he had "flu" three years ago, and a series of mild attacks of "flu" since then. Took sick last fall and went to the hospital in another part of the state, November 5, where he was aspirated nine times by a very reputable physician. The patient said they took anywhere from a cup to a pint of fluid each time which was practically always bloody. When seen he was about 30 pounds underweight, no temperature, pulse normal, some chest pains, marked shortness of breath, and a feeling of pressure or fullness over the right chest. He had a moderate secondary anemia; no tubercle bacilli were found in his sputum. The sputum was dark and bloody at times and at other times clear. I aspirated the right thoracic cavity and obtained two liters of bloody fluid. Dr. Floyd Grave reports as follows: "Rather thin, bloody fluid. Differential count, lymphocytes 78 per cent, P.M.N. cells 12 per cent, large mononuclears 10 per cent. These large mononuclear cells are a peculiar type. They are not epithelial or endothelial cells which line the pleural cavity. They look like an extremely large monocyte. This does not look like an inflammatory exudate. I would lean toward malignancy if I

should offer an opinion." After aspiration flat plates showed a thickened pleura over the lower half of the lung, with mottled infiltration in the upper lobe and rather dense, irregular but more or less circumscribed shadows extending out from the lower right hilum. There is slight displacement of the heart to the left. No evidence of infiltration in the left lung except increased bronchial markings. A diagnosis of primary malignancy was made, but hope was held out that the accumulation of fluid which seemed to embarrass his breathing so much and for which he seeks relief might be prevented from forming by radiation. With this view of relief in mind he was entered at the Northwestern Hospital where Dr. Hanson gave him three exposures on successive days. Since that time he has been more comfortable. There has been no reaccumulation of the fluid, but there is a slow progressive weakness and the chances are that he will succumb soon. I am merely showing this case to suggest radiation for repeated pleural effusions as a result of malignancy, as this is the second case that has had such relief from the same.

DISCUSSION

DR. R. G. ALLISON (Minneapolis): Pulmonary embolus is not an infrequent occurrence. The termination is not always as happy as in this case. I have seen one result from a preliminary injection of novocain into the pleura. There is much to be said in favor of opening down into the pleura for the first injection of air in artificial pneumothorax. Pulmonary embolism occurring in artificial pneumothorax usually does so with the first injection by the closed method.

In the second case the pleura was so thick it was almost impossible to visualize the parenchyma of the lung. The fact that the man has elastic tissue in his sputum, with the sputum negative for tubercle bacilli over a long period of time, makes it somewhat difficult to diagnose pulmonary tuberculosis. I think in this case it is more likely that there is a lung abscess that is pulling the heart over, rather than bronchiectasis. Ten per cent albumin in the sputum is perfectly compatible with bronchiectasis. I think that quite probably there is both a bronchiectasis and an abscess, but in either event, with the amount of elastic tissue present, I think it would be quite worth while to inject with lipiodol and demonstrate the abscess before establishing drainage. I did twelve cases of artificial pneumothorax in bronchiectasis, and I found that usually we could collapse everything but the bronchiectatic cavity. Neither is there any reason for thoracoplasty at this time.

As to the third case the diagnosis of malignancy is wholly clinical. The x-ray shows infiltration of the lung with marked thickening of the pleura. The bloody fluid and the absence of tubercle bacilli might indicate a primary carcinoma. I have treated several primary carcinomas, five in all. I remember one was a woman who had been operated upon by Dr. Webb, in 1921; sections showed carcinoma. I took the woman to Northwestern, treated her, and the lung lesion cleared up, and then she went ahead and got a lobar pneumonia in the other lung and died of that.

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

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The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the *Journal-Lancet* is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—1100.

The case is that of a woman, 37 years old, who was admitted to the hospital on May 23, 1930, seven months pregnant and complaining of dyspnea of three weeks duration and orthopnea of three days duration. Her blood pressure was 160/100. The heart was enlarged to the left and seemed to be of mitral type, according to percussion. The rate was 140. There were no murmurs. There were moist and coarse bubbling râles at the bases of the lungs. The liver seemed enlarged. There was slight pitting edema of the lower extremities. The diagnosis was congestive heart failure. Electrocardiogram showed simple tachycardia. X-ray confirmed enlargement of the heart, suggesting mitral disease.

On May 28 she underwent Cesarean section and a living baby was delivered. Following the operation there was only slight improvement of the cardiac condition. She lost weight rapidly and complained of precordial distress in spite of all supporting measures. Symptoms of pleural effusion developed and thoracentesis was done several times. On July 17 she developed bilateral parotitis, very high fever, and marked leucocytosis. She died on July 24. No definite diagnosis as to the cause of the cardiac condition had been made. Two blood cultures taken shortly before death were positive for staphylococcus. Her temperature was nearly always normal, but two or three times it rose to 101.4°, and once to 102° for a day.

Postmortem report. The body is well developed, somewhat emaciated; no edema or jaundice. The peritoneal cavity contains 1,000 c.c. of cloudy fluid. Encapsulated empyema in the right pleural cavity, containing about 100 c.c. of pus. 60 c.c. of clear fluid in the pericardial cavity.

The heart weighs 330 grams. It is 14 cm. in width and the chest is 21.5 cm. in width. The chambers are dilated. The heart muscle is pale and soft. All the valves are normal. The endocardium of both ventricles is covered by a thrombus. On section this thrombus is found to show organization in nearly all parts. The lungs show bronchiectasis with the dilated bronchi filled with pus. The bronchiectasis is extensive in both lower lobes. There is marked passive congestion of the liver. Thrombosis of the right renal vein. The uterus is of about

normal resting size. The wound in the anterior aspect of the fundus is well healed but there is some pus in the sutures.

Diagnoses. Cardiac failure due in part to extensive mural thrombosis of the ventricles; bronchiectasis, empyema, suppurative parotitis, and septicaemia.

Comment. Presumably the bronchiectasis is the primary lesion in this case. The mural endocarditis probably resulted from the infection in the lungs. This is a very unusual form of cardiac death.

Autopsy—30—736.

A little girl, seven years old, admitted to hospital April 26, 1930, because of chronic otitis and possible mastoiditis. She had middle ear infection at one and one-half years of age following an acute cold. Ear had discharged continuously since except for a period of three weeks following scarlet fever at the age of three years. Discharge had been foul smelling and had to be cleaned two or three times daily. During the last year the discharge had been thicker but there was no change in amount. Adenoidectomy at two years and tonsillectomy three years later without benefit. She had no complaints referable to the ear except for slightly increased discharge at time of colds, to which she was susceptible two or three times a year with average duration of two weeks or more. Past year had complained of frontal headache three or four times, which passed off when she went to sleep. No vertigo at any time. General health had been good except for being underweight.

On April 15 she developed a slight cold. On the twenty-first complained of pain in the right external ear. No change in discharge at this time. Two days later she came home from school, complaining of being sick; was listless. The next day she complained of postauricular pain, headache, and pain in the back with increase of discharge. She looked feverish. April 25 pain was more severe; had a severe chill lasting half an hour, followed by profuse sweating. Discharge lessened. Admitted to hospital through the dispensary. Temperature 100°.

Examination showed a fairly well nourished white female child. Right ear was discharging and there was pain on pressure behind the ear. Also a little swelling. There was some neck resistance but not

definite. No sign of meningitis.

Diagnosis: chronic suppurative otitis media and mastoiditis with acute exacerbation. April 30 nystagmus was present; neck was moderately rigid. Kernig was questionable. Spinal fluid was obtained with moderate pressure and it was milky. Patient was mentally clear but complained of severe headache and was somewhat lethargic. No vertigo, nausea, or vomiting. The pupils were equal and reacted to light.

Spinal fluid varied from a milky opacity to a slight turbidity and cell counts were 3,531; 9,000; 1,750; 2,600; 896; 1,230; 212; 1,600; 500; 1,847; 2,138; 151; 215 per cmm. No bacteria were recovered. Ear culture showed some streptococci and gram negative bacilli of the colon type. Blood cultures were negative.

Urinalyses were repeatedly negative. Blood: hemoglobin 55 to 60 per cent; erythrocytes 3,340,000 to 3,930,000; leucocytes 16,400 to 9,650 before death, with a normal differential.

Mastoidectomy was done April 28, the day a turbid spinal fluid was first obtained. Her temperature ran a septic course in the beginning with a peak of 103°. It remained normal the last several days. She died May 13, 9:03 P. M.

Post-mortem report. The organs of the thorax and abdomen show no changes except cloudy swelling, which is prominent in the heart and liver. There is edema of the brain and the subarachnoid fluid is cloudy. The right cerebellar hemisphere is adherent to the petrous temporal bone. An abscess containing about 50 c.c. of thick pus is found in the right cerebellar hemisphere. There is thrombosis of the right superior petrosal sinus. The abscess is evidently an extension from the right mastoid and the meningitis is an extension from the cerebellar abscess as well as from the mastoid infection.

Diagnosis. Abscess of the cerebellum following otitis media and mastoiditis.

Comment. Mastoiditis frequently gives rise to an abscess of the cerebellum inasmuch as the cerebellum lies upon the petrous temporal bone. The infection is apparently a direct extension through the emissary veins of the bones.

Autopsy—30—1333.

This is the case of a man, 69 years of age, known to have had diabetes for 7 years. Never received treatment during the first five years but for the past two years he had been under the care of a doctor. Under dietary management, without insulin, his urine was sugar-free until last April when it showed some sugar. In August, 1930, he developed acidosis following an automobile trip. This condition cleared up and he returned to work on September 2. On this date there was a trace of sugar in the urine and some acetone. On the night of September 2 his abdomen became distended and he suffered with generalized abdominal pain. He was given sodium bicarbonate which relieved the pain slightly. September 3 he was still distended. He vomited many times. He was given insulin which had very little effect. On September 4 he was given 20 units of insulin. The pain continued. At 3 A. M., September 5, he became very weak and showed muscular

twitching. He became unconscious. He was given 20 units of insulin but showed no reaction. Death 4 A. M., September 5.

His systolic blood pressure was about 160 mm. of mercury while he was under the care of the physician.

Postmortem report. The body is well developed and well nourished; no edema or jaundice; no gangrene of the extremities. The heart weighs 475 grams. There is moderate left ventricular hypertrophy. The transverse measurement of the heart is 12 cm.; that of the chest at the same level is 26 cm. Rather marked sclerosis of both coronary arteries. One descending branch of the left coronary is completely closed. Marked sclerosis of the root of the aorta and severe atherosclerosis of the entire aorta. Edema of the lungs. Chronic empyema of the gall bladder with formation of an abscess 3 cm. in diameter in the adjacent part of the liver. Marked sclerosis of the pancreatic and splenic arteries. Sacular aneurism of the abdominal aorta, just above the bifurcation, about 6 cm. in diameter, due to arteriosclerosis and not to syphilis. This aneurism has ruptured and there is extensive hemorrhage into the retroperitoneal tissues and into the peritoneal cavity.

Diagnoses. Ruptured arteriosclerotic aneurism of the abdominal aorta. Generalized arteriosclerosis.

Comment. The clinical diagnosis in this case was obscure. Inasmuch as he had diabetes, a diabetic coma was suspected, but the clinical picture did not correspond to a diabetic coma. It is clear from the postmortem that the ileus was due to extensive hemorrhage into the retroperitoneal tissue, compressing and irritating the sympathetic nerves. Death was directly due to hemorrhage. Arteriosclerosis is more pronounced in elderly diabetics than in non-diabetics of corresponding age.

Autopsy—30—1083.

A man, 47 years old, on the evening of July 17 was injured in an automobile accident. There was a fracture of the left humerus at the junction of the middle and upper thirds. There was a compound fracture of both radius and ulna of the left arm. There was a deep gash on the left arm, extending from the wrist to the elbow. On the morning of July 18 he was anesthetized and a Lane's plate was used by the open method on the fractured humerus. In the forearm the bones were sutured together with kangaroo tendon. Following the operation the temperature gradually rose to a maximum of 106°. The left arm became greatly swollen and discolored from the finger tips to the shoulder. Death July 19, 2 P. M.

Post-mortem report. Crepitation of the skin of the lower extremities and of the left arm. No pneumonia. Foamy liver and foamy brain.

Diagnosis. Gas bacillus infection following compound fractures.

Comment. Gas bacillus infection is fairly frequent in open wounds of this type. The diagnosis is made clinically and at post-mortem by crepitation of the tissues. At the post-mortem the foamy liver is the outstanding feature. The gas develops for the most part after death, especially in the liver.

A NEW EDITORIAL BOARD FOR THE JOURNAL-LANCET

Established sixty years ago, THE JOURNAL-LANCET has kept pace with the development of the profession in the Northwest, recording and reflecting its opinions and its accomplishments. It has ever had a vigorous, vital editorial policy, a policy which had in mind the best interests of the physicians in the Northwest.

The virile and fighting spirit of Dr. W. A. Jones has always been reflected in the editorial section. During the years that he has been editor, and they are close to thirty now, he has kept in touch with the pulse of the profession and has fought with them, and sometimes against them, for what he thought was best for the profession, as a whole.

The accomplishments of Dr. W. A. Jones are many. Last year he was a vice-president of the American Medical Association. He was one of the founders, and former president, of the Minnesota Academy of Medicine, and a former president of the Minnesota State Medical Association. Other honors have been heaped upon him, honors which were his due because of his keen mind, active efforts and willingness to serve.

His students and his colleagues have ever appreciated his broad vision, and to them THE JOURNAL-LANCET represents a monument of his accomplishments; to them it represents a definite symbol of what he has done for the betterment of the profession.

The time has come, we believe, to develop the scope of THE JOURNAL-LANCET that it may better keep pace with the rapid advances of the medical profession in the Northwest. Scientific papers and addresses will appear as they have in the past, as well as proceedings of local societies. In addition to the scientific section more space will be devoted to the broader questions of medical economics, medical legislation, as well as other problems which vitally affect the practice of medicine. It will not be bound by precedent nor by fear of personal prejudice, favoritism or sectionalism, but shall be guided by the spirit of the greatest good to the greatest number.

To this end an editorial board has been appointed to cooperate with Dr. W. A. Jones and develop a broader program for THE JOURNAL-LANCET toward the accomplishments of these purposes. The Editorial Board for THE JOURNAL-LANCET now consists of the following men:

Editor:

DR. W. A. JONES

Associate Editors:

DR. J. F. D. COOK, Langford, S. D.
Secretary, South Dakota State Medical Association

DR. A. W. SKELSEY, Fargo, N. D.
Secretary, North Dakota State Medical Association

Board of Editors:

DR. JAS. P. AYLEN, Fargo, N. D.

DR. STEPHEN BAXTER, Minneapolis

DR. ANDREW CARR, SR., Minot, N. D.
President, North Dakota State Medical Association

DR. W. A. FANSLER, Minneapolis

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DR. C. A. STEWART, Minneapolis

DR. S. MARX WHITE, Minneapolis

DR. C. D'ARCY WRIGHT, Minneapolis

DR. H. M. N. WYNNE, Minneapolis

DR. THOMAS ZISKIN, Minneapolis

Other leading men in the Northwest will be added from time to time to this board to take care of the increased program and assist in the development of the enlarged and broadened policy of THE JOURNAL-LANCET.

We ask the medical profession of the Northwest to assist in this new development. The changes in THE JOURNAL-LANCET as they take place will be slow but they will, we hope, be definite and progressive. We want to reflect the pulse of the profession and to this end we ask our readers to send in scientific contributions and news items as well as their opinions on the medical problems of the day so that we can conduct an open forum that will make THE JOURNAL-LANCET the leading medical journal of the Northwest.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana

The Official Journal of the
North Dakota and South Dakota State Medical Associations
The Hennepin County Medical Society
The Minnesota Academy of Medicine
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

W. A. JONES, M.D., *Editor*

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A. W. SKELSEY, M.D. - - - Fargo, N. D.

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MINNEAPOLIS, OCTOBER 15, 1930

AGAIN THE NEW EDITORIAL BOARD

The first official meeting of the new editorial board of THE JOURNAL-LANCET was held on the evening of October 1, following a dinner at the Minneapolis Club. Dr. J. A. Myers was elected Chairman and Dr. Thomas Ziskin, Secretary. Dr. W. A. Jones will continue, of course, as editor-in-chief. The meeting was conducted efficiently and briefly and on strictly ethical principles (if such a thing exists).

The purpose of this board and the names of its members was published in the issue of October 1, but for the benefit of those who may have failed to read it, we are again publishing it on the opposite page.

MEDICAL ETHICS, PAST AND PRESENT

We gave some space recently to comment on an editorial which appeared in the *Minneapolis Journal* on this subject, in which medical men were urged to change their ethics in some respects.

From the point of view of the editor very little ethics exists in some respects among the medical men at the present time. Everyone is struggling for a living and the result is that among the medical men themselves has suffered. They have pushed their ethics into the background.

Mr. Lou Benschhoff, editor of the *Detroit Lakes Record*, speaking on "Publicity" as practiced by the medical profession, before the members of the Northern Minnesota Medical Association at Moorhead recently, said: "We, of the press, condemn your code because it is too restricted; it muzzles the press; it is an indictment of the power of the press; it impugnes the integrity and motives of the press; it condemns the press as an evil because a portion of it may be evil; it assumes the press is in the hands of men who are inefficient, untrustworthy—men 'who do not understand the professional attitude'; and men who themselves make no research and who are altogether too 'commercially minded.'" Mr. Benschhoff quoted, too, from the *Minneapolis Journal* and urged the medical profession to utilize advertising space in reputable newspapers to further its own ends and at the same time aid mankind, all of which probably will not be done, probably because the medical men have a sense of honor and ethics in this connection which they fear to violate. It is our opinion that medical ethics is suffering a change in the wrong direction; that medical men nowadays do not hesitate to violate the principles that exist (or should exist) between the medical men one to another; and hesitate to alter their ethics with regard to the press.

At a recent meeting of the Hennepin County Medical Society the question of ethics was discussed pro and con, but nothing was arrived at; probably because the members like to hear themselves talk indefinitely without arriving at anything concrete, and they expect their suggestions to be acted upon and spread abroad. So, are we to expect a man who is reduced through circumstances which he cannot control to relinquish his patient simply because he had been treated by another physician because it is his duty, said duty to be severely felt in his pocketbook; or are we to expect him to hang on to what he thinks is his because he and his family can do better by his getting what he can from the other fellow. We understand that ethics among other business and professions has suffered, too, with the present depression. They, too, take what they can get, whether it be theirs or someone else's. We are encouraged and assured by prominent financiers that the outlook is for improvement. We hear, too, from those with whom we are in more direct contact that business is gradually and steadily improving; that it does not compare with what it has been, but that there is a change for the better. How much is gotten out of the increased business that is done is uncertain, but

we are encouraged by the fact that the volume is greater.

ADVERTISING INFLUENCE

Selfpreservation is the strongest instinct in life. It is this impelling force that drives patients to seek medical advice and care. Would that those who belittle medical ethics might grasp the sacredness of the responsibility reposed in the physician who has chosen to supply this need!

During the many years of training necessary in order to qualify to perform this function, he learns as he could in no other way, the necessity for rules of conduct. He learns how susceptible the sick are to suggestion, how anxiously they look for a remedy and how acutely they respond to pictures of hope and despair. He learns the great therapeutic value of hope and the pernicious, destructive effect of hopeless despair. This knowledge may be made use of to accomplish much good or employed for purely mercenary motives. By the unscrupulous it may be used to frighten overmuch and pave the way to sell an empty promise. How readily these unfortunates part with silver and gold when in this state of mind influenced by the promisor is well known to him.

It is influence then that we would dwell upon. Publicity and advertising are not synonymous terms although often so misconstrued. Publicity has as its function to enlighten and furnish correct information and greater knowledge. Advertising may use publicity to further its purpose but that purpose is always to influence and this is the chief reason why it has a money value. Except for this it could not be sold. When the Daily Press attacks medical men for not advertising and tries to show how they would benefit by so doing, they are advertising their own wares and trying to influence the purchase thereof.

It is this buying of influence that is abhorred because it is directed against the weak and helpless. It is to be hoped that the press will share our views and use its influence to shield and protect rather than exploit the unfortunate.

A. E. HEDBACK, M.D.

NEWS ITEMS

We extend a most cordial invitation to the secretaries of the different District Societies to send us the reports of their monthly meetings as well as any news items that will be of interest to the profession.

Dr. and Mrs. C. E. Alexander, Duluth, have gone to Europe for a year's vacation.

Dr. W. G. Hough has sold his practice at Malta, and is now located at Chester, Mont.

Dr. and Mrs. J. E. Soper, Minneapolis, have recently returned from several months travel in Europe.

Dr. J. W. Moreland, Dunn Center, N. D., has moved to Capiro, where he will continue general practice.

Dr. Homer Russ, formerly located at Swea City, Iowa, has opened offices for general practice at Blue Earth, Minn.

Dr. O. H. Williams, formerly located at Springfield, S. D., has moved to Yankton, where he will continue general practice.

The Glen Lake Sanatorium, Minneapolis, will commence work at once on the new service building that will cost about \$150,000.

Dr. N. G. Mortensen, St. Paul, has been promoted to the rank of lieutenant colonel in the United States Medical Reserve Corps.

Dr. P. T. Watson, Northfield, Minn., has returned to China, where he was suddenly recalled to fight the outbreak of the bubonic plague.

Dr. H. J. Day, who has been located at White Lake, S. D., for many years, has moved to Sioux Falls, where he will continue in the general practice of medicine.

Dr. Eli E. Christianson, Rochester, Minn., was recently married to Miss Eloise C. Borth, of Winona. They are taking an extended trip through Canada.

Dr. J. R. Kingston, who has been an interne at Abbott Hospital, Minneapolis, is now located at Grand Rapids, where he has opened offices for general practice.

Dr. Chas. M. Long, a pioneer physician of Osakis, Minn., died recently at the advanced age of 82 years. He was a graduate of Rush Medical College, Chicago.

Several meetings have already been held to perfect arrangements for the Golden Jubilee of the two Dakota Medical Societies that is to be held next year at Aberdeen.

The annual meeting of the Black Hills Medical Society will be held in Rapid City, S. D., early in December and a committee is now at work arranging the program.

The annual fall meeting of the Red River Valley Medical Society was held at Warren, Minn., this month, with Dr. S. H. Boyer, of Duluth, making the principal address.

Dr. P. V. Matthaei, Fessenden, N. D., has opened offices for general practice of medicine. He was recently elected an active member of the Tri-County Medical Society.

Dr. W. F. Cogswell, secretary of the Montana State Board of Health, reports twenty cases of spotted fever and nine deaths from the disease in that state during the past nine months.

A Diabetes Hospital at the University of Minnesota is now being planned to cost \$1,000,000. This hospital will be one of ten such institutions in metropolitan centers throughout the country.

Dr. W. A. Chamberlain, who had been in active practice at Waseca, Minn., for over thirty years, died very suddenly on the train, when he was en route to his old home at Springfield, Mass.

Dr. O. H. Wangenstein, Professor of Surgery at the University of Minnesota, delivered an interesting paper at the last meeting of the Sixth District Medical Society, held at Bismarck, N. D.

Mrs. Ida Blomberg and Mrs. Olga Stenhoff, Minneapolis, were recently sentenced to a four year term at the women's reformatory at Shakopee, on charges of performing an illegal operation.

Dr. C. J. Watson, Minot, N. D., sailed for Europe this month. He will be located at Munich, where he will be a member of the staff of one of the largest hospitals in that city. He will be absent about a year.

A new hospital has been dedicated at Terry, Mont. It takes the place of the hospital recently destroyed by fire and is being built as near fire proof as possible. Miss Margaret Beddor, R.N., is superintendent.

Dr. J. E. Perkins, St. Paul, has been awarded a Rockefeller Foundation Scholarship for a year's study at the Johns Hopkins University at Baltimore. Dr. Perkins was a graduate this year from the University of Minnesota.

Dr. John Lyng, Minneapolis, who was well known in all sections of Minnesota, died last month from a sudden attack of heart trouble.

He had a very large practice and had studied and traveled in this country and abroad.

Dr. A. L. Hammeral, who has been practicing medicine for the past 25 years at Glendive, Mont., has moved to Billings, where he will continue in general practice. Dr. Hammeral has recently returned from an European trip.

Dr. C. A. Rohrer, Minneapolis, has purchased the practice of Dr. G. D. Guilbert, Waterville, Minn., and will continue the practice of medicine in that city. Dr. Rohrer is a graduate of the Minnesota University Medical School.

Dr. O. F. Ringley, Crosby, Minn., has taken over the practice and hospital work of the late Dr. F. L. Wilcox, at Walker, Minn. Dr. Ringley was for many years located at Brainerd, after graduating from the University of Minnesota.

The Red River Valley Medical Society held its Fall meeting at Warren, Minn., on October 9, with about fifty members present. Drs. Andrew McKinnon, Winnipeg, and R. C. Webb, Minneapolis, were the principal speakers on the program.

Former resident physicians of Rochester, Minn., now residing in various parts of the country, returned last week for the twelfth annual meeting of the Association of Resident and Former Resident Physicians of the Mayo Clinic and Mayo Foundation.

About twenty-five members of the Black Hills Medical Society held their quarterly meeting at Hot Springs, S. D., last month. The scientific program was one of the best ever presented at any of their meetings. Dr. J. L. Stewart, Nemo, is president of the Society.

Dr. Gilbert Seashore, Minneapolis, who has been the county coroner for the past twenty years, was tendered a dinner this month by his many friends among the physicians and business men of the city in honor of the services he has given the city during those years.

At the monthly meeting of the Minnesota Academy of Medicine, held last week, the following program was presented: "Familial Diffuse Sclerosis of the Brain," Dr. J. Charnley McKinley. "An Improved Pelvioureteroplastic Operation for Hydronephrosis," Drs. F. E. Foley and Arnold Schwyzer.

Dr. T. B. Smiley, of Mt. Vernon, S. D., died September 29, after a lingering illness of three months. Death was caused by lymphatic leukemia. He had practiced medicine in Mt. Vernon for 35 years and was one of the outstanding men in the profession in that state. He was 64 years old. He graduated from Bishop's Medical College in Montreal. His death is a decided loss to the state and community because of his service to humanity which was always of the highest class.

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Wednesday morning over Station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters). Speaker: William A. O'Brien, M.D., Associated Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. The program for the month of November will be as follows: November 5th, Poliomyelitis; November 12th, Treatment of Cataract; November 19th, Carcinoma of the Lip and Mouth; November 25th, Psoriasis.

At a meeting of the Southwestern District Medical Society held at Bowman, N. D., last month, the following officers were elected for the ensuing year: President, Dr. D. Lemieux, Bowman, N. D.; vice president, Dr. J. V. Neville, Dickinson, N. D.; secretary and treasurer, Dr. A. E. Spear, Dickinson, N. D.; delegates, Dr. J. L. Dach, Reeder, N. D., and Dr. A. E. Spear, Dickinson, N. D.; councilors, Dr. S. W. Hill, Regent, N. D., and Dr. A. P. Nachtwey, Dickinson, N. D. The feature of the meeting was a paper by Dr. J. W. Bowen, Dickinson, N. D., on "Acute Intestinal Obstruction." All of the unfinished business of the Stark County Medical Society and the Southwestern District Medical Society was finished and the new Society, a husky infant of some thirty enthusiastic members, was delivered. The next meeting of the Society will be held in Dickinson some time during the month of November, depending upon the weather and condition of the roads.

Medical men of the Northwest are greatly favored this year by the choice of Minneapolis as the meeting place of the International Assembly. Think of the convenience and savings from the standpoint of transportation and hotel accommodations alone. Then there is the announcement of the advance sale of banquet tickets for this Medical World's Series. We hope to take care of every doctor and his wife

who will attend, but these banquets have been so large in the past that on some occasions procrastinators were disappointed when they learned of their popularity at the last moment. Some of the best after-dinner speakers in the world will be on the program and a rare treat is most certainly anticipated. Tickets are \$5.00 a plate. Come in evening dress if you please, dinner coats or even in Will-Rogers' if you prefer. All can not be canvassed by letter but those who read this are asked to accept it as an equally cordial invitation to take advantage of this early reservation suggestion and mail their checks to Dr. A. E. Hedback, Chairman of Tickets and Printing Committee, care of Hennepin County Medical Society, Minneapolis, Minn.

The fall meeting of the North Dakota Academy of Ophthalmology and Otolaryngology was held in Grand Forks, October 3, at the Dakotah Hotel, under the presidency of Dr. H. B. Beeson. "Furunculosis of the External Auditory Canal" was the subject of a paper presented by Dr. H. O. Ruud of Grand Forks, and Dr. C. L. Oppegaard of Crookston, Minn., addressed the Academy on the subject "Vertigo, Considered from an Ophthalmologic Standpoint." The papers were ably presented and brought forth full discussions. At the business session Drs. W. R. Winn, of Jamestown, and B. C. O'Reilly, of Minot, were elected to active membership and Dr. C. L. Oppegaard, Crookston, to honorary membership. Dr. Geo. M. Constans made his report as chairman of the legislative committee. The annual meeting to be held in connection with the Sioux Valley Society in Aberdeen, S. D., during June of next year, was discussed. The January program of the Academy will be held in Fargo with Dr. Rolfe Tainter as chairman of arrangements. After a very fine banquet the Academy adjourned to the stadium to view the intersectional football clash between the University and Davis-Elkins, of West Virginia.

Sixth District Medical Society

A meeting of the Sixth District Medical Society was held at the hotel Patterson, Bismarck, N. D., September 29, 1930, at which were present thirty-three members and seven visitors. Dinner was served at seven P. M. after which the regular business meeting was held at which time Dr. J. M. Nelson, of Hebron, N. D., was unanimously elected to membership in the Society.

The following scientific program was then presented:

"Intestinal Obstruction" with report of 240 cases and illustrations with lantern slides was given by Dr. C. W. Schoregge, Bismarck, N. D. Discussion by Dr. O. H. Wangensteen. "Carcinoma of the Stomach" with case reports and lantern slide demonstrations was next presented by Dr. O. H. Wangensteen, Professor of Surgery, University of Minnesota. Discussion by Dr. E. P. Quain, of Bismarck, N. D.

W. L. DIVEN, M.D., Secretary

The International Graduate Medical Assembly

Our readers should be reminded of the gathering in the Minneapolis Auditorium, from October 20th to 24th, inclusive, of The International Graduate Medical Assembly. It is probably the most valuable educational opportunity that annually offers to the medical profession. Physicians of the Northwest should take advantage of it. We all need it.

The Inter-State Postgraduate Medical Association of North America, in putting on this Assembly, does the most intensive piece of work undertaken by any medical organization anywhere. It gives a four days' diet of strong meat for strong minds. During those four days, sessions continue from 7:30 in the morning to, probably, ten o'clock at night; with intermissions for luncheon and dinner and brief mid-morning and mid-afternoon recesses, during which those attending the meeting can take in the object lessons of the scientific and technical exhibits.

Among the speakers will be found many well-known names, among them, Abt, Bevan, DeLee, and Phemister, of Chicago; Adson, Braasch, Judd, and the Mayos, of Rochester; Allison, Christian, Joslin and Quinby, of Boston; Barker, Dean Lewis, and Whitridge Williams, of Baltimore; Barr and Elsworth Smith, of St. Louis; Deaver, of Philadelphia; Gordon, of Montreal; Erdmann, of New York; Alan Brown, of Toronto; Arnold Schwyzer and Burch, of St. Paul; Crile and Lower, of Cleveland; Cumming and Ray Lyman Wilbur, of Washington (D. C.); Fraser, of Edinburgh; Haggard, of Nashville; Polak, of Brooklyn; Musser and Ochsner, of New Orleans.

Joint Meeting of The Minnesota Educational Association and the Minnesota Congress of Parents and Teachers

Dr. Morris Fishbein, editor of *Hygiea* and the *Journal of the American Medical Association*, will address a joint meeting of The Minnesota Educational Association and the Minnesota Congress of Parents and Teachers, Thursday morning, October 30th, at 10:00 A. M., in the Minneapolis Auditorium on "Food Fads and Follies."

Dr. Fishbein comes to Minneapolis to be principal speaker for the annual meeting of the Minnesota Public Health Association to be held at the Nicollet Hotel, Thursday evening. He will appear on the morning program of the parents and teachers meeting under health association auspices.

The general subject of the Thursday morning session will be "The Physical Welfare of the Child" with Dr. W. A. O'Brien, professor of pathology at the University of Minnesota, sharing headline honors with Dr. Fishbein, who will speak on "The Physical Health of Childhood." Dr. O'Brien is one of the pioneers in the field of health education by radio. He will talk to the congress of parents and teachers on the subject of "The New Childhood."

E. V. Everts, director of physical and health education of the State Department of Education, will preside at the meeting.

Community singing with pipe organ accompaniment and presentation of summer round-up prizes by Dr. E. A. Meyerding, executive secretary of the Minnesota Public Health Association, are also features of the program.

Sponsors for the meeting, representing all of the major health agencies of the state, are Judge C. F. Hall, director of the Children's Bureau; Dr. S. H. Boyer, president of the Minnesota State Medical Association; Miss Olivia Peterson, supervisor of nurses, State Board of Health; Mrs. Daniel Coonan, health chairman, General Federation of Women's Clubs; Dr. A. J. Chesley, executive secretary, State Board of Health; Mrs. G. B. Shepard, president, St. Paul Council of Parents and Teachers; Swan Sigford, president, Minneapolis Council of Parents and Teachers; E. V. Everts, director of physical and health education, State Department of Education; C. G. Schulz, secretary, Minnesota Education Association; Dr. R. O. Beard, executive secretary, The Health Council of the City of Minneapolis and the County of Hennepin; Miss Chloe Owings, professor director, Social Hygiene Bureau, University of Minnesota; and Dr. E. A. Meyerding, executive secretary, Minnesota Public Health Association.

Inactive Duty Training School

The second annual duty training period for medical reserve officers will be held at Rochester, Minn., November 9-23, under the sponsorship of the Mayo Foundation; directed and personally supervised by instructors of the Medical Corps of the United States Army detailed to Rochester for the purpose. The curriculum embraces basic subjects essential to all medical officers.

The school offers opportunity for officers who have not received summer training to earn one hundred hours toward the required number for promotion at the expiration of their respective periods of appointment. The instruction covers a period of fourteen days of seven hours each. All medical reserve officers are eligible.

Any physician wishing to join the reserve corps should apply at once for a commission and when commissioned will be qualified to register for the course.

The course of instruction is arranged so as to allow visiting officers to attend clinics in the mornings and school of instruction during the afternoons and evenings.

Last year's course proved very profitable. Several officers of various branches of the regular army visited the school.

Medical reserve officers interested should write Colonel Louis B. Wilson, The Mayo Foundation, Rochester, Minn.

BRAIN ABSCESS

Among the twenty-eight cases of brain abscess reviewed by C. C. COLEMAN, Richmond, Va. (*Journal A. M. A.*, Aug. 23, 1930), choked disk occurred with about the same frequency as in brain tumor. In ten cases of frontal lobe abscess, choked disk was present in seven. Of the twelve temporal lobe abscesses there were seven cases with choked disk. The disks were normal in the three cases of right parietal abscess, and in the three cases of cerebellar abscess the disks were slightly blurred before operation in two, and were normal in one case until some weeks after the operation, when papilledema developed. The ocular muscle palsies are of little importance in the series. In one frontal and two temporal lobe abscesses with considerable papilledema, bilateral paralysis of the external rectus was found, but this is also a common finding in high intracranial pressure from tumor. A right ptosis in one frontal lobe abscess was observed, and a dilated, fixed pupil in another patient was found, with an abscess in the same location. Right ptosis developed in a patient with an abscess of the right lobe of the cerebellum. The results of operation in this series of twenty-eight cases, while generally satisfactory, were disappointing in some instances. The patients who recovered appear to be normal in every respect. The freedom from convulsions or mental impairment after recovery from the abscess is worthy of note. If the abscess is so located as not to endanger certain important functional areas, the late residuals are likely to be few and unimportant.

CLASSIFIED ADVERTISEMENTS

Position Wanted

Position wanted by expert x-ray technician. Good references. Address 764, care of this office.

For Sale

Instrument cabinet and operating table for sale very reasonable. Address 761, care of this office.

For Sale

For sale cheap, practically new Victor Bedside, complete with Coolidge tube and table. Address 752, care of this office.

Oculists and Opticians Attention

Having disposed of my practice elsewhere, will sell my entire equipment of eye, ear, nose and throat instruments; microscope, trial-lenses, ophthalmoscope, etc., very cheap. 2639 Humboldt Ave. So. Phone, Kenwood 0474.

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Technician at Liberty

X-ray technician, with two years clinic experience, wishes position in hospital, clinic or doctor's office. Good references. Address 756, care of this office.

Doctor's Assistant

Young lady with experience would like to locate with Minneapolis doctor as assistant. One year experience. Good references. Address 759, care of this office.

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South Dakota city of 600 is without physician. Located in North Central part of state. A good location with large trade territory. Address 751, care of this office.

Doctor, Attention!

Doctor, let us sell your practice, find suitable associate, assistant, location, or position for you. Central Physicians Bureau, 1010 Equitable Building, Des Moines, Iowa.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Wanted

A well trained specialist, internal medicine, interested in joining a well established clinical group in Twin Cities. Scandinavian preferred, although not essential. Address 763, care of this office.

Practice for Sale

General practice in modern North Dakota town of 900. No opposition, large and prosperous farming territory, completely equipped office, x-ray and diathermy. Five bed emergency hospital managed by a nurse. Must sell or dispose of this practice, for personal reasons, by the first part of November. Little cash, or no cash, and monthly payments from income. No real estate. Willing to let in as Locum Tenens (take all cash made), with option of some arrangements later. Address Dr. S. Moske, New England, N. D.

For Sale

Up-to-date 15-bed hospital for sale in one of the finest agricultural districts in South Dakota community; mostly rich German farmers; several churches, very good new school; two banks doing over a million business; farmers' cooperative creamery; for a man doing major surgery, this is a chance of a life time; with the hospital will sell my office fixtures, including a Wappler x-ray, Fischer diathermy, actinic-ray, etc.; my office and modern home can be rented; you must be capable of doing major surgery; \$26,000 will handle it; reason for selling, going to Europe to specialize and locate out west; no triflers please. Address 760, care of this office.

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REPORT OF A CASE OF EXUDATIVE CHOROIDITIS

BY C. D'A. WRIGHT, M.D., F.A.C.S.

MINNEAPOLIS, MINNESOTA

Choroiditis may come from lues, anemias, tuberculosis, intestinal toxemia, infected teeth, tonsils, sinuses, gall bladder; in short, from any focus of infection in the system.

It is hardly believable, yet not less true, that not more than forty years ago choroiditis was considered solely as a secondary or tertiary luetic symptom.

Dr. Adolph O. Pfingst reports a case of exudative choroiditis from coryza following otitis media. *Kentucky Medical Journal*, December, 1925.

Prof. W. H. Hoffmann, M.D., reports a case after general sepsis following incomplete abortion. *Journal of Tropical Medicine and Hygiene*, November 15, 1929.

Dr. Manuel Uribe Troncoso reports cases of choroiditis from leprosy. He believes that so-called tubercular choroiditis is not a direct histological reaction of the tissue to the virus itself, but really only a product of the allergic reaction of the choroidea to the toxins of tubercle bacilli, which are destroyed or decaying in other parts of the body. *American Journal of Ophthalmology*, February, 1927.

Dr. M. E. Meseron reports choroiditis due to the toxemias of pregnancy. *American Journal Ophthalmology*, May, 1927.



Plate 1

Dr. Edgar H. Vaughan reports a case of choroiditis from infection of the ethmoids and sphenoids. *Texas State Journal of Medicine*, September, 1925.

Dr. Mary Moench reports a case from foci in cervix. *M.C.N.A.*, May, 1927.

Dr. W. P. Ling, Peking, China, gives a very classical article on choroiditis accompanying Hutchison's triad.

Dr. H. T. Mann says, "a focus of infection in any part of the body may be the cause of central choroiditis." *Texas State Journal of Medicine*, December, 1926.

If any focus of infection in the body may cause a central choroiditis, it may cause a choroiditis not central.

The choroid reacts to infection first by localized foci, the result of primary local inflammation.

In acute exudative or (so-called) plastic choroiditis, first are seen yellowish white foci, the retina is edematous, the retinal vessels may be (all or part of them) dilated. Early in the disease the disc may be larger of outline, edematous, and mushroom shaped or little disturbed.

Contrary to many recorded opinions, vision may be reduced to counting fingers or only light perception, in one to three days.

There is proliferation of the pigment epithelium and the chromatophores of the stroma disintegrate. At this time the pigment remains in the choroid. Later when both the choroid and retina are atrophied a secondary discrete perivascular superficial pigmentation takes place.

When the inflammation becomes diffuse both choroid and retina are inflamed and afterwards the vitreous contains exudate.

Quite distinguishable is the other type of choroiditis that comes as a primary vascular degeneration of the choroid, as seen in lues, diabetes, nephritis, and other diseases that produce a slow sclerosis of the choroid capillaries and then the large choroidal vessels. No inflammatory foci start this degeneration. The choroidal vessels show the perivasculitis with a narrow central blood stream; later they are transformed into a yellow-white network of winding cords that present such a peculiarly striking fundus picture.

Stroma pigment later atrophies and the intervascular spaces show through the sclera. The vessels are thread-like (atrophic retina). Pigment of the retinal surface migrates and forms

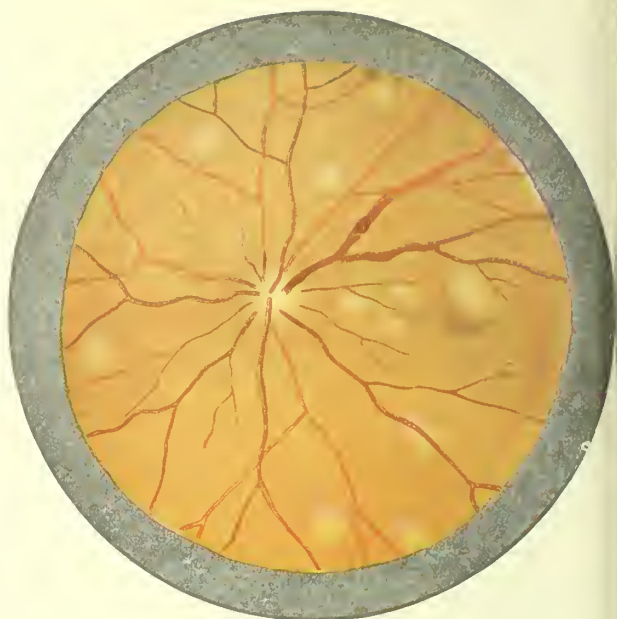


Plate 2

over the arteries giving a fundus picture similar to that of advanced retinitis pigmentosa.

In reporting the following case of exudative choroiditis three especially interesting features present themselves. First, reduction of vision to a very marked degree during the early stages of the disease. Second, recovery from severe, exudative choroiditis. Third, the disease was observed during the first twenty-four hours of the onset.

Patient, male, age 40, occupation professional, presented himself at the office, July 27, 1928, requesting that a glass be fitted for benefit to the vision of the right eye, which, for some years had been deficient.

The vision in the right eye was 20/80 and in the left eye 20/20. His family history was good. He had suffered from some of the minor diseases of childhood from which he had made full recovery and since childhood he had never consulted a doctor except for the repair of the sphincter ani which was lacerated in an accident. This was in 1924. Hospital records show no infection and satisfactory termination.

Refraction was made by Dr. Paul A. Higbee. Right eye, vision 20/80, with plus 1.75 cyl. axis 175° = vision 20/20 minus 2. Left eye, vision 20/20 with plus .50 cyl. axis 90° = vision 20/20, plus.

Dr. Higbee requested me to look at the right fundus which, he said, showed choroidal change. The macular region was normal and the vision was 20/20, minus 2, with correction. The choroidal lesions were old. See plate No. 1.

The left fundus seemed a little hazy, the upper nasal quadrant especially so. The vision was normal and the field for white and colors and the blind

spot were normal, so the pathology of the left fundus was marked, "undue imaginative activity on the part of the observer," and request was made to see the left fundus again when the patient should return for acceptance two days later. The patient said that the left eye had always been and was now perfect.

Early the second morning the patient presented himself at the office saying that the day before he saw clouds, at times, and that this morning when he awoke the left eye was blind.

The left fundus was again examined. The left disc was edematous, large and mushroom-shaped, yellowish-white oblong patches appeared at different places in the fundus with a sacculated patch in the region of the macula, yellowish white above, merging to reddish, then blue below, with the convexity down. (See plate No. 2.)

The left superior vein was dilated but there was no segmentation. The inferior artery was small but still functioning.

The teeth were suspicious. X-ray showed oral infection, third degree. The mouth was cleaned up by Dr. William A. Dickson. The patient was hospitalized August 1, 1928.

His height was five feet, seven inches, and his weight was 218 pounds. Physical examination of the head was normal except for the eye symptoms. Neck, chest, heart, abdomen were negative. Extremities were normal. Skin was normal. Deep reflexes were normal. All reflexes were normal except those connected with the eye. The cranial nerves functioned normally. X-ray of the sinuses was negative. Examination of the stools was negative except for occult blood (outside) plus. Daily specimen of urine was normal. Hemoglobin was 90 per cent. Red blood count was 5,500,000. Leucocyte count was 8,000. Differential count, normal. Blood urea was normal. Wassermann was negative. Phth. test 45 per cent, two hours. 1/100,000 mg. O. T. intracutaneously, repeated, gave no reaction. No k.p. X-ray of intestinal tract with barium meal and fluoroscope gave no enlightenment except for slightly dilated stomach and large distended gall bladder which emptied slowly. No stone shadows. Blood pressure was 85/138. Basic —16.

The spinal fluid analysis was as follows: 25 c.c. of perfectly clear, colorless fluid removed under slight increased pressure. Specific gravity, 1.004. Reaction, Ph. 7.4. Cell count 3 per cm. Globulin, Nonne test, negative. Noguchi's test, negative. Cytology, occasional small lymphocyte, no other cells found. Sugar, 86.5 mgm. per 100 c.c. of fluid. Wassermann, negative. Kahn's method, negative. Colloidal gold, no change. Chlorides, 700 mgm. per 100 c.c. of fluid. Calcium, 4.5 mgm. per 100 c.c. of fluid. No pellicle formed over night, no sediment, no foam. Rosenheim's bismuth test for choline was negative. (Chemistry by Dr. A. H. Kaplan, St. Johns Hospital, St. Paul, Minn.)

The right eye had a visual acuity of 20/40. The left eye could count fingers questionably at three feet. The field and general usefulness of the right eye was much impaired by old choroiditis.

Diagnosis was made of focal infection from teeth,

acute exudative choroiditis of the left eye, chronic dessemnated choroiditis of the right eye, with overnutrition. There was no reaction to foreign protein injections.

Patient was given large doses of sodium iodide, intravenously, hot packs and copious amounts of hot lemonade, the hot drinks being the only food allowed for three days. After the third day 26 ounces of skimmed milk were allowed for four days and no other food, water ad lib. Patient was not allowed to be about whatsoever. Massage was given every other day and, after the first week, 1,200 calories of food per day were allowed.

At the end of thirteen days the patient has lost 20 pounds of weight and the vision in the left eye was 20/200. Fourteen hundred calories of food were allowed daily now and the treatment was changed to dried extract of thyroid and the patient was allowed to sit up at intervals. After six weeks, patient's weight was 179 pounds, vision in the left eye was 20/100 and the field for white and colors was about half normal. Patient was sent home on obesity diet and thyroid was reduced to one grain three times a day. A colored glass was yet demanded as any light caused pain in the eye.

Continued improvement followed slowly and on March 22, 1929, vision was 20/40 in the left eye and it was about as useful as ever. At this time the vision is 20/30 and no inconvenience is caused by continued near work.

Some acetylsalicylic acid was given to relieve the pain in the head and discomfort felt in the left eye during the first week or two of the treatment and later the same drug was used to combat the headache caused by the thyroid extract.

Systematic, carefully regulated, head and neck exercises designed to benefit circulation of the head in general were made.

Note is made of the wonderful benefit obtained by thyroid feeding where no syndrome of hypothyroidism was present but where the basic was somewhat low and where no reaction was obtained by injection of foreign proteids.

The writer is indebted to Miss Agnes Monson for coloring the fundi used in illustrations in this report.

SOME NEWER REMEDIES IN TREATMENT OF PERNICIOUS ANEMIA

RAPHAEL ISAACS and CYRUS C. STURGIS, Ann Arbor, Mich. (*Journal A. M. A.*, Aug. 23, 1930), assert that dried, defatted hog stomach may be used as a therapeutic agent in inducing and maintaining a remission in patients with pernicious anemia. A remission may be induced with dried material (15 Gm.) corresponding to 100 Gm. of fresh stomach, and the remission may be maintained with 7 Gm. of this material. However, a safe clinical dosage is 10 Gm. for each million red blood cell deficit in the red blood cell count. The maintenance dose is 10 Gm. from five to seven times a week. So far no gross differences have been noted in the clinical features of the liver-induced remission and that after stomach therapy.

LABYRINTHITIS

BY C. D'A. WRIGHT, M.D., F.A.C.S.

MINNEAPOLIS, MINNESOTA

Labyrinthitis may be considered in two forms: (1) the non-suppurative and (2) suppurative.

The former is more common and less emphatic in its symptomatology and ends in recovery without surgical procedure. The suppurative form is more emphatic and dangerous in results. They are quite hard to differentiate, at times, until the spinal fluid shows signs of meningeal irritation or inflammation.

The symptoms are irritation and impairment of the nerve apparatus, dizziness, spontaneous nystagmus when looking to the irritated side first, and later, when looking to the sound side, vomiting and characteristic equilibrium disturbances. When the cochlea is involved, there are noises and greater or less loss of hearing and shortened Schwabach. Temperatures run from 100° to 101° F. Over that (except in children) indicates intracranial involvement. Choked disc is not caused by labyrinthitis. The tendency of the body is to fall in the direction of the slow component of the nystagmus in the early stages, no matter how the head is placed.

Also in the early stages of labyrinthitis there is labyrinthine irritability with slightly prolonged after-nystagmus and vertigo.

With these symptoms, when the spinal fluid is that of suppurative labyrinthitis, with fever and headache, surgical procedure is called for.

Vestibular Reflexes: Whether the diagnostic nystagmus results from mass movement of the fluid in the semi-circular canals, molecular movement, pressure changes, exultation or excitation of function or what not, the result is the same. Past pointing has no value in establishing the activity of the labyrinth.

Rotary nystagmus is very useful to us, when combined with other symptoms, in making a diagnosis of destruction of the labyrinth. Example: Patient looking straight ahead shows no nystagmus. When the opaque glasses are put on there is a slight nystagmus to the right visible, presumably toward the sound side. This would indicate a long-standing lesion or destruction of the labyrinth on the left side. If the rotary nystagmus is stronger toward the right side, or lasts longer, the diagnosis may be considered certain.

After disease, when the tympanum is filled with morbid products, or if there is acute tympanic inflammation, caloric tests may be nil when the labyrinth is normal. In this condition, however, the rotary test will differentiate.

When, with the bilateral galvanic test, or the caloric bilateral test, no nystagmus occurs, the vestibular apparatus may be assumed to be normal. Differentiation between irritability and destruction of the labyrinth is sometimes extremely difficult.

In speaking of the caloric test here, we assume that the external auditory canal and the tympanum are unobstructed. When the caloric test gives no nystagmus, and the kathode nystagmus is away from, and the anode is toward, the side of the suspected lesion, the irritability of the vestibular nerve is diminished, but the end apparatus is normal.

Now, if, in this case, the kathode nystagmus was toward, and the anode away from, the side of the suspected lesion, the vestibular nerve on the side of the lesion is hyperirritable and the end apparatus normal. If, in this case, there was caloric nystagmus toward the side of the suspected lesion, and kathode nystagmus away from, and the anode toward, the side of the suspected lesion, the irritability of the nerve and the end apparatus is diminished on the diseased side.

When there is caloric nystagmus toward the side of the suspected lesion, and no galvanic nystagmus the nerve is normal, but the irritability of the vestibular apparatus is diminished.

When there is caloric nystagmus toward the side of the suspected lesion with kathode nystagmus toward, and anode nystagmus away from, the side of the suspected lesion, the irritability of the end apparatus is diminished, yet that of the nerve is increased on the side of the lesion.

When caloric nystagmus is away from the side of the lesion, with kathode nystagmus toward, and anode nystagmus away from, the side of the suspected lesion, both end apparatus and nerve are hyperirritable on the side of the lesion.

This latter test is found generally in cases of considerable intracranial pressure.

When there is erosion of the bony labyrinth and the membranous labyrinth is intact, a fistula often remains for a very considerable portion of time. If, at this time, the opening be touched, severe nystagmus and vertigo results. Here the compression and rarefaction test produces greatly exaggerated nystagmus. These phenomena are known as the fistula test and are of great importance, often indicating immediate surgical interference. Once elicited, it should not be repeated.

After extension of inflammation to the membranous labyrinth, the latter is thickened and coagulation of the endolymph often results, which renders it immobile. Rarefaction and compression here will produce nystagmus when all other tests fail.

Static and dynamic tests for equilibrium are rather intricate. Practical static tests are:

1. Standing with feet close together and eyes closed, rise on the tip toes, balance on one toe.
2. Have a patient hop backwards on one toe and then the other with his eyes shut.

If these two simple tests are consummated, we may dispense with the goniometer.

Of course, in many cases equilibrium tests are impossible.

Acute loss of function of the vestibular apparatus may characterize acute labyrinthine suppuration. This is usually followed at once by horizontal and rotary nystagmus, vertigo, rotation of self and objects, nausea, and, generally vomiting, and even an inability to stand. *The patient lies on the sound side and looks toward the side of the lesion to minimize the nystagmus.*

Nystagmus tests do not modify the existing nystagmus. The subjective symptoms soon disappear. At this time positive reaction with the kathode on the diseased side shows that the vestibular nerve is still capable of transmitting impulses, unless the kathode current necessary to give reaction is twice the normal current.

The reaction of the galvanic current occurs through the nerve endings and through the nerve itself. In case of destruction of the labyrinth it requires double the current to bring about definite kathode reaction (through the nerve itself) the nerve endings being destroyed.

Unilateral labyrinthine diseases may show deafness, shortened bone conduction, loss of perception of higher tones, attacks of giddiness or vertigo, subjective sounds, and positive reaction on the diseased side, and generally, disturbance of equilibrium by actual test. Hyperirritability for galvanic stimulus with the kath-

ode points to pathological irritation of the labyrinth, and, the strength of the current is a quantitative measure of the abnormal increase of irritability. Four ma. is the strength of the current required to give kathode reaction in the normal labyrinth. If two ma. give the reaction we could thus call the irritability increase as two ma. In such a case the kathode reaction in the sound side would be six ma. as two ma. would be used upon balancing the normal irritability on the diseased side. When kathode irritability is increased on the diseased side it will be found apparently diminished on the sound side. Likewise, with the anode on the diseased side, two ma. would be required to balance the abnormal irritability, plus four ma. which is necessary to produce normal reaction in the individual, equaling six ma.

The vestibular system is far more generally affected early in suppurative disease than is the cochlea.

Noises and deafness are the signs of loss of function of the cochlea. Loss of function of the cochlea, however, unlike the loss of vestibular function, may occur from central nervous disease in *which case both ears will be affected*

In clinical work the differential diagnosis of uncomplicated labyrinthine disease from various other conditions stimulating it, is of vital importance. It is equally important to tell when uncomplicated labyrinthine disease has complicated itself by extension to the meninges or brain. Unfortunately, there is no test or tests that will give an absolute differentiation in all cases of irritation of the labyrinth due to extra-labyrinthine disease from uncomplicated labyrinthine disease. Central nervous (chiefly cerebellar) disease with labyrinthine symptoms may be differentiated reasonably well from uncomplicated labyrinthine disease.

When we suspect that suppurative middle ear disease may be complicated by disease of the vestibular apparatus, the following data will be useful in making differential diagnosis.

1. If only middle ear disease exists, nystagmus will occur normally from the caloric, galvanic, and rotary tests, and the tests will agree with each other on both sides.
2. There will be no vertigo or spontaneous disturbance of equilibrium.
3. There will be no spontaneous nystagmus, and none in looking straight forward behind opaque glasses; none, or very slight, in looking to extreme right or left; none from passive jerk of head.

4. The position in bed will be uninfluenced.
5. There will be no nausea or vomiting.

When there is inflammation of the serous membrane of the labyrinth before there is destruction of the function, there will be changing nystagmus, spontaneous, on looking forward from behind opaque glasses. In rare cases spontaneous nystagmus is absent, but will be induced by rapid jerking of the head. Caloric ipsilateral nystagmus will be greatly diminished. Rotation and galvanic nystagmus will be little altered. Of course, there will be no fistula symptom; hearing usually impaired; some vertigo, and even nausea and vomiting, in some cases. Patient will choose to lie on the sound side.

When we suspect that labyrinthine disease is complicated with cerebellar abscess, the following suggestions are useful: In such cases caloric reaction on the ipsilateral side is negative; there is no fistula symptom; spontaneous nystagmus is always present; also, nystagmus from looking straight forward through opaque glasses; hearing is generally very poor, if the cochlea is infected; there is vertigo and vomiting; equilibrium disturbances; caloric and galvanic tests are without value.

If, then, the spontaneous nystagmus is toward the diseased side and does not shift with varying positions of the head, and the tendency to fall does not depend upon the direction of the nystagmus, diagnosis of cerebellar abscess may be made. Now, if in such a case, the nystagmus is toward the sound side and the direction of the fall tendency depends on that of the nystagmus, and varies with the position of the head and the patient lies on the sound side, the *diagnosis of diffuse labyrinthine suppuration may be made*. If these symptoms do not decrease in from two to five days (especially if the labyrinth has been operated upon) or if they increase, then we must assume intracranial lesion. If there is cerebellar abscess with a normal labyrinth there will be spontaneous nystagmus on one side or the other, protean and often aberrant nystagmus. Spontaneous nystagmus may or may not show by looking straight forward through opaque glasses. Head jerks produce spontaneous nystagmus or increase the aberrant form present. Various combinations of equilibrium disturbances and vertigo are present; vomiting; position in bed generally determined by the nystagmus; hearing is not lost; there may or may not be tinnitus. There is hyperirritability of the vestibular end organ; this is a very important symptom. Aber-

rant nystagmus may be always presumed to be a central origin.

"It must be remembered that symptoms of intracranial pressure may occur from protective meningitis, and nystagmus may result by meningitis or hemorrhage involving the internal meatus. Disturbance in hearing are more common in meningitis than in brain abscess."¹³

Infection of the labyrinth even when suppuration is present will give pain somewhat similar to that of otitis media. When suppuration starts in the cochlea, in the few cases the writer has seen, the pain is localized and becomes intensely severe and continuous.

When labyrinthitis is complicated by infection of the deep cells of the petrous pyramid through the labyrinth to the basal cisterna infection of the Gasserian ganglion may follow, giving severe homolateral, temporal and trigeminal region pain, around and behind the eyes and in the teeth.

The blood study is not as important in labyrinthitis as in some of the other deep infections. Hemoglobin and differential count, of course, should always be taken and blood transfusion where severe anemia exists should be resorted to before operation. The benefit from comparative study of the polynuclear count and the leucocyte, and the ratio is not well marked even in suppurative labyrinthitis. The spinal fluid shows no change in exudative labyrinthitis except slight increase in pressure. In the suppurative form there will be increase in pressure generally and disappearance of copper reduction and rapid and marked increase in the cell count.

In withdrawing spinal fluid with suppurative labyrinthitis, care should be taken that withdrawal is made slowly and in small quantities.

We depend much on adding the diagnosis of meningitis, protective or true, to the diagnosis of suppurative labyrinthitis already made, by study of the spinal fluid.

Liberations of organisms from a localized infection by withdrawal of spinal fluid in cases of suppurative labyrinthitis and protective meningitis may undoubtedly produce deeper infections, if not properly done. This danger is reduced to a minimum if withdrawal is made slowly and in small quantities.

Uncomplicated labyrinthitis does not cause papilledema. It does not cause true optic neuritis.

Acute labyrinthitis is differentiated from beginning brain abscess by loss of function of the

labyrinth in labyrinthitis. Again, signs of disfunction of the cerebellum never appear with labyrinthitis.

When labyrinthitis complicated cerebellar abscess, labyrinthine tests are our hope of differentiation.

"Labyrinthine operation is indicated when there is suppurative disease of the whole or one of the parts (usually the vestibular.) It is indicated when labyrinthine disease is complicated with infection of the posterior, or, more rarely, the middle fossa. We must remember that infection of the cerebellar fossa may occur directly from the antrum through the petromastoid canal."¹⁹

If the symptoms of suppurative labyrinthitis with a non-functioning labyrinth are present and we have reason to expect deeper extension (by at least a protective meningitis with increase in cells in the spinal fluid with disappearance of copper reduction, and an increase in fluid pressure, more imperatively, if bacteria are present in the spinal fluid) surgery of the labyrinth is indicated.

I have been unable to get an intelligent mortality rate following standardized, radical labyrinthine operations, but every surgeon knows that it is shockingly high. It is bound upon the wheel of things that chance often plays an important part in our success and even our opinions.

My apostasy to the standardized radical labyrinthine operations is due partly to the chance recovery of Dr. Lalliberte's case; partly to the remarks made by that dean of all ear men, Dr. Adam Politzer, at Vienna in the course of the winter clinical work about the time he reported his first review of his mastoid operations back in the nineties of the last century; partly, because to date it has served me perfectly in my cases, and after doing and viewing mastoid and internal ear surgery for forty years, I would have the described operation for internal ear infection were I the one to be operated on.

It is done by opening the horizontal semicircular canal just above and back of the facial canal and following to the vestibule. It recommends itself because it may be so easily and safely done after mastoid operation, using the posterior path to the vestibule when the anterior turn of the canal is too near the facial as indicated by facial twitching.

I have never found the external semicircular canal less than 2 m.m. wide, 1/12 of an inch, most anatomists record it as 1/20 of an inch in

width. I believe the vestibule is usually larger than recorded also.

Please recall that the *membranous* labyrinth has an *uninterrupted* canal for the endolymph which it contains. Protective meningitis, or true meningitis, often results (when there is a suppurative inflammation progressing in the cochlea) through the internal auditory meatus or by way of the aquaeductus vestibuli which opens behind the crista and ends in the petrous portion of the temporal bone. This aquaeductus contains a small vein and the ductus endolymphaticus is a prolongation of the lining membrane of the saccule and utricle, and ends in a cul-de-sac, between the layers of the dura in the cranial cavity.

The *vestibule* contains a fluid, the perilymph, also the utricle and saccule of the membranous labyrinth, and they communicate with the cochlea by the *canalis reuniens of Hensen*. It is reasonably easy to see how a suppurative inflammation of the cochlea may drain into the body of the vestibule by rupture of the membrane of the utricle or saccule. When pus from the cochlea drains into the vestibule it has then no way of discharge externally and, consequently, there follows a brain infection by the less resistant route of the aquaeductus vestibuli which ends, as we have seen, in the cul-de-sac between the layers of the dura, in the cranial cavity, or by way of the central canal of the cochlea or the area cribiformis media to the internal auditory meatus.

The operation which I propose for suppurative labyrinthitis, is to make a drainage from the vestibule, externally, by uncovering of the lateral semicircular canal, which is *easily* opened above (and slightly externally to the facial canal!) carefully enlarging the openings at each end of the canal as it enters the vestibule.

I think this appeals to one's reason when we consider that it is probable that we may, in the majority of cases, perform this operation before there is suppuration in the cochlea, as the cochlea is usually the last part of the labyrinth to be invaded when there is a suppurative labyrinthitis.

When there is suppuration of the cochlea, I believe, the suppuration will generally connect with the vestibule sooner than by the internal route to the brain and it seems not improbable to me that the operation might be perfected in the future by applying very mild suction to a smaller uncovering of the internal area of the canal than I have done and shown in this picture. The external drain might be easily encouraged

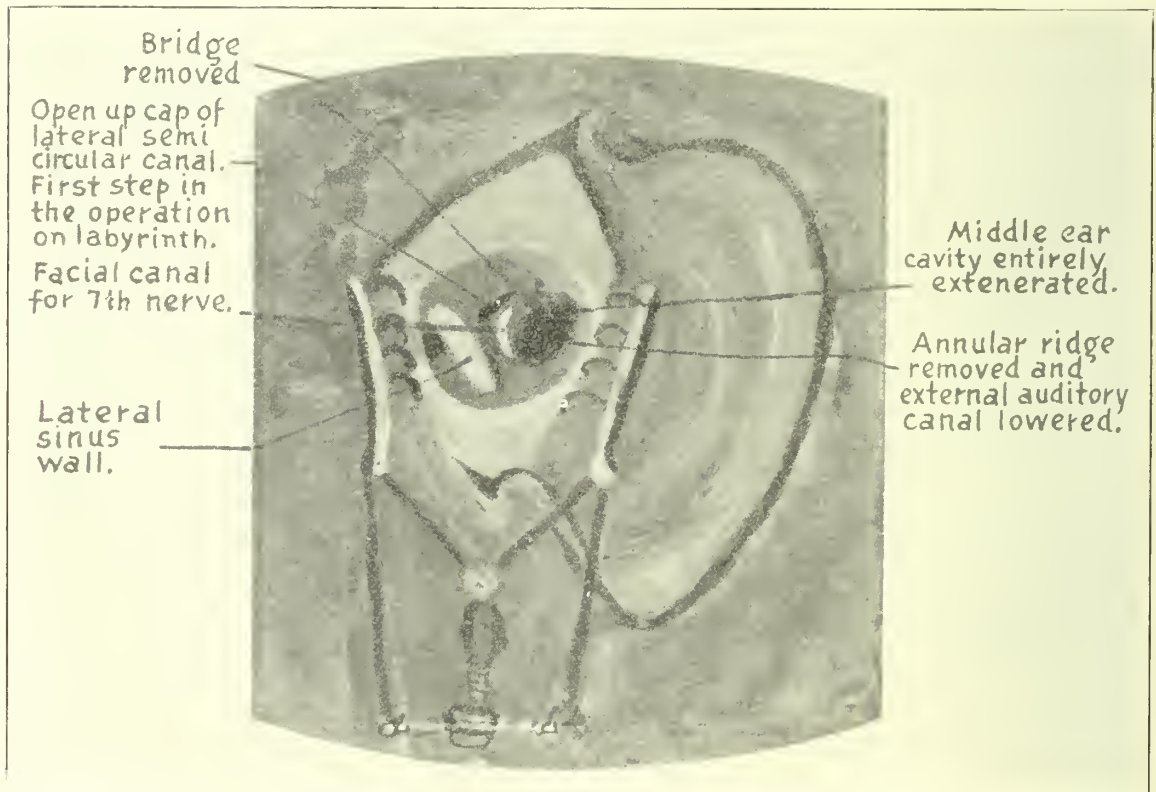
by such suction, just as the internal extension of infection is often helped or favored by too rapid or too extensive withdrawal of the spinal fluid.

While I am unable to compile the mortality rate on any large number of cases following the present standardized radical labyrinthine operation on the internal ear, owing to the rarity of the condition, I think all must admit that it is tremendously high, even as performed by the most skilled, who have had occasion to perform it many times. The operation presented recommends itself, in that it may be done easily, safely and quickly, by a competent aural surgeon, even when doing his first case; also from the fact that there is virtually no risk in adding this operation after mastoid operation has been done. It is less often that it would be indicated where

a radical mastoid operation was not first indicated, but should a case present it could be done when only a simple mastoid operation was demanded for the mastoid condition.

I annex the report of three cases which terminated satisfactorily and a drawing made from dissection showing the operation completed. Drawing and dissection done by myself.

I have used this operation in five cases with five recoveries. It is the way nature takes to evacuate suppuration of the labyrinth when spontaneous recovery occurs. When the internal wall of the tympanum is molested during the radical labyrinthine operation meningitis follows often. One complication showed meningitis following in between one-half to three-fourths of listed cases.



Case No. 1. Patient, male, age 16, seen in consultation with Dr. Lalliberte, in 1898. Double mastoid was done during attack of scarlet fever. The otitis had started later in the course of the infection on the left side and was less ravishing than on the right side where the otitis started shortly after the onset of the scarlet fever.

There was temperature of 104° to 106°. Very profuse discharge from the external canal of both ears. There was spontaneous, rotary nystagmus to the

left. Equilibrium tests were impracticable under the conditions. There was mastoid swelling and tenderness on both sides; no fundus changes. Pain was not severe or characteristic at the time of the examination. No paralysis or palsies. There was, at times, mild delirium; no rigid neck. At the onset of the scarletinal infection a few convulsions had occurred. Urine showed albumin, casts in abundance. The right ear was deaf to speech.

Simple mastoid was done on the left side and on

the right side, a modified radical operation was done and the wall of the middle fossa unintentionally opened, the bone covering the lateral sinus was bad looking and the dura over the sinus was exposed. A small perforation of the wall of the horizontal semicircular canal was discovered and when enlarged, visible pus presented, and the external wall of the canal was removed and openings to the vestibule, anteriorly and posteriorly, gently enlarged and opened mostly by the use of a curved canaliculus knife. The region near the junction enlarged carefully by the use of a short broad-bladed cystotome used for capsule rupture in cataract operation, keeping the flat side toward the facial canal while working on the anterior entrance.

The wound was dressed often, the labyrinth drained and recovery was complete. The right labyrinth was dead and the hearing was nil.

Case No. II. A. L. E., age 40 years, male. Year 1904, on July 4, a Roman candle was thrown and struck the patient in the right external auditory meatus and exploded after it struck.

I saw the case some weeks after the accident. He had had surgery and treatment of the middle ear but had steadily grown worse. His temperature was 101°, pulse 84. He had a fine spontaneous nystagmus toward the left, complained of some difficulty in maintaining equilibrium for some days and had had "agonizing, terrible pain" deep in the region of the ear for the last three or four days. He had experienced noises for days and the right ear was entirely deaf. In attempting to stand with eyes closed, the tendency of the fall was toward the right. He had had some nausea and occasional vomiting during the last ten days.

The cartilagenous part of the canal had been considerably torn to pieces and some destruction had been done to the temporal bone. There was considerable diseased bone and a modified radical mastoid was done and in the removal of what was thought necessary, the middle fossa was exposed, likewise the wall over the lateral sinus. The horizontal semicircular canal was uncapped over the distance between the anterior and posterior turn and free opening through the posterior arm was made into the vestibule and a very reasonably free opening following the natural canal into the vestibule through the anterior arm. The radical flap, of course, was not laid. The wound was treated nearly as a completely open wound. Dressing was made often with normal saline solution. Visible free pus, at different times, was seen to drain through the opening in the external auditory canal from the vestibule.

Yet, the severe pain, which I have learned to regard as characteristic of cochlear suppuration, continued for many days. Probably from the slow drainage afforded to the cochlea by way of the canal unicus of Hensen.

Recovery followed, though the patient complained that for years he was unable to be rotated in any way without discomfort. The patient was asked to the office during the summer of 1930, but he would not consent to testing the labyrinth. He feels very well at this time but does not view swift passing traffic without a sensation of fear from vertigo although equilibrium is fully re-established and he

can now consummate a Romberg. There has been no discharge from the ear in the last 23 years.

Case No. III. Patient, male, age 26 years. Year 1916. Patient was first seen lying on left side with spontaneous, rotary nystagmus to the left. Patient complained of dizziness, had vomited severely during the previous week and would not allow the pillow about his head to be touched fearing severe vertigo which he said would surely kill him if it returned. Pulse was jerky, feeble and somewhat irregular at about 58. He had suffered from chronic otitis media with intermittent discharge following scarlet fever ten years before.

The right ear was deaf and he had marked tinnitus. Hemoglobin was 80; white cell count, 10,500; Pmns., 90 per cent; small lymphocytes, 8 per cent; large lymphocytes, 2 per cent; transitionals, 1 per cent. No disc abnormality; no face or ocular paralysis or pupillary phenomena were present. X-ray showed right mastoid scleroses. Very severe pain had been present at times lately and as patient, at the time of the consultation, was reasonably comfortable, operation was rejected. A day or two later patient submitted to operation because of return to pain, located in the ear and which was continuous and intense. The infection was short rod strep, with mixed low grade bacilli. Brain involvement was anticipated. The external auditory canal was full of pus and polyps, with cholesteatoma in the tympanic cavity and antrum.

A modified radical operation was performed and the horizontal canal was opened and after treatment was carried on as in case No. II. Recovery was complete, ear remaining deaf. Of course, in these internal ear operations, the radical mastoid flap is never laid after the operation.

TOILET WATER DERMATITIS

J. E. LANE and M. J. SRAUSS, New Haven, Conn. (*Journal A. M. A.*, Sept. 6, 1930), describe a peculiar dermatitis which has received but little attention in the American or English medical literature but has been frequently described by German, French and Italian dermatologists. Most of the reported cases have been due to the use of eau de cologne. The condition is known as berlock dermatitis (Rosenthal), dermite pigmentée en forme de coulée (Du Bois) and dermatitis des rinnenden tropfens (Stein). A typical case of this eruption due to a preparation other than eau de cologne is reported.

URETHRAL ECTOPIC URETER FROM HYDRONEPHROTIC HALF OF DOUBLE KIDNEY

Urethral ectopic ureters without incontinence of urine are exceedingly rare. As a source of pyuria and bacteriuria, such ureters may present difficult diagnostic problems. The persistence of pus and bacteria in the urine without an assignable cause should lead to a careful search for an ectopic ureter. The case presented by EDGAR G. BALLENGER, OMAR F. ELDER and HAROLD P. McDONALD, Atlanta, Ga. (*Journal A. M. A.*, July 26, 1930), probably the first to be reported in a male, is illustrative of this condition.

THYMIC DISORDERS—THEIR RECOGNITION AND TREATMENT WITH A REPORT OF SIXTEEN CASES*

BY RALPH E. PRAY, M.D.

FARGO, NORTH DAKOTA

The controversy over thymic disorders is so full of theory and debate that no attempt will be made here to formulate anything new, but merely to present a summary of the subject as it now stands, with cases to substantiate some of the symptoms most commonly seen and the conclusions derived therefrom.

The embryology of the thymus is even a matter of conjecture, but presumably the third and fourth bronchial clefts are the source. At birth the gland usually weighs between 7 and 12 grams. It increases in size, until between the ages of eleven and fifteen years the weight is given as from 30 to 40 grams. From then on it gradually diminishes, having practically disappeared by the thirty-fifth year.

A review of the literature indicates that Vesalius and Bartholinus were the first to describe the thymus about the middle of the seventeenth century.

During about the same period, Morgagni ascribed sudden deaths of unknown cause to thymic enlargement.

Hammer later advanced the view of the epithelial origin of the gland, adding that the lymphocytic content was an infiltration. He also classified the gland according to its position; namely, cervical, thoracic and cervico-thoracic.

Ivor and Bangs, in 1904, found the nuclear content of the thymus to be five times greater than that of the ordinary lymph node. This resulted in a high phosphorus content, making it seem reasonable to conclude that this was the purpose of the gland in metabolism.

Paltauf, some years before, had associated the enlarged thymus, a generalized lymphatic hyperplasia, a narrowing of the blood vessels, and a small heart with the condition which has been known as status lymphaticus.

The more recent writers on the subject have been less positive in their statements than those of the nineteenth century. At that period there were two positive views on the cause of symptoms. The one was that of pressure on the

trachea due directly to the size of the gland. The other was that of a secretion acting as the causative agent.

C. L. Short of the Harvard Medical School stated in concluding a review of 24 articles that:

1. The thymus is not necessary to life.
2. Thymectomy has no effect on the growth and development of the skeleton and organs.
3. Castration delays involution of the thymus.
4. A substance contained in the thymus when injected causes convulsions.
6. Thymic hyperplasia follows double suprarenalectomy.
7. Thymic hyperplasia in thyrotoxicosis is secondary.
8. In birds a relationship exists between the thymus and egg production.
9. So-called thymic death not due to tracheostenosis probably bears no relation to the state of the thymus gland.
10. One, if not the primary, function of the thymus is to produce leukocytes.

In 1913, Yokoyama proved that injections of extract of thymus were hypotonic and inhibited partially the action of adrenalin on blood pressure.

Abt, in 1926, says: "After various experiments and observations, it is doubtful if the thymus is the source of an internal secretion in human beings, and at least it is not proved; but it should not be considered that the thymus is a superfluous organ."

These various opinions are only a small portion of the numbers to be found in literature. A few additional, more recent ones, will be used in emphasizing points made later. But from this you can readily see the futility in stating any one theory as fact on the basis of present-day knowledge.

SYMPTOMS

The symptoms most commonly recognized as due to thymic disorder is the intermittent cyanosis seen occasionally in the newborn. This is often passed off as due to a collection of mucus

*Read at the meeting of the North Dakota State Medical Association, at Bismarck, N. D., May 26, 27, 28, 1930.

blocking the upper respiratory passages, and since the improvement usually occurs in a few moments in the ordinary case, the credit is given to the hurried swabbing or suction of the throat. Recurrences finally draw attention to the source of the trouble.

Laryngeal stridor, more easily recognized by the term "crow," may occur in the newborn, or not until several months later. The intensity of sound may vary from a slight rasping with each inspiration to what can amount to a shrill cry. It always occurs on inspiration and may be accompanied by cyanosis. This, as with cyanosis, will be found to vary in intensity from time to time, even disappearing entirely at intervals.

Again, we have the infant described as having such a terrible temper. The mother will tell how, without any apparent cause, the baby will develop a sudden fit of anger, which will terminate in a prolonged breath holding stunt that frightens the parent to the extent of her insisting that if she were not right there to administer a sound slap or two over the back or buttocks, she is sure the baby would not breathe again. The term "rage spasm" is most commonly applied here.

Convulsions—real, general, tetanic convulsions can be caused by a thymic upset, and this may be prevented if you have been privileged to examine the child previously, and have detected a slight stridor, or received a suspicious history leading you to percuss out a large or suspicious thymus.

There is the child who will suddenly turn deathly pale and go into an acute collapse. The pulse may remain perfectly good and the respirations continue normally regular. This is, however, rare, as they are often irregular and usually shallow.

The rasping, peculiar cough, perhaps paroxysmal in type, where no apparent cause is in evidence, requires a check of the thymus. But choking spells may be the only history given.

Now in more recent years we have been taught to consider the vomiting infant a potential thymus case. This is particularly true where we have the projectile type seen most commonly associated with pylorospasm, or a questionable pyloric stenosis. We may, or may not, have been able to detect visible peristalsis, and the vomiting may be more of the regurgitant type. Where we have had success with atropine in the past, we now check the thymus. Rubin pointed out the association of these conditions during my period of pediatric training, and as a con-

sequence the opportunity was afforded to see definite improvement result from the treatment of the gland. But often the enlargement of the thymus was not shown by the x-ray or discovered by percussion in these cases. Now Aldrich, in the *A. M. A. Journal* for April 1, 1930, makes it very evident through a series of forty cases that results are obtained by treating even what appears to be a normal sized gland, and stresses the vagotonic nature of all the symptoms we relate to the thymus, including "bronchospasm"—or as has been more commonly referred to, "thymic asthma."

Thymic asthma has in itself been the subject of considerable controversy. Aldrich gives five cases showing what we would recognize as typical asthma. In these five, of the numerous cases studied, he found definite thymic enlargement, and by treatment of the thymus secured complete relief for the patient. In cases where there is a recurrence, further treatment gives immediate relief.

TYPE

There can be no hard and fast rule laid down as to any one type of child in whom to suspect thymic disorders. Undoubtedly, before another ten years, we will be able to tell, not only in which child to suspect thymus, but to predict duodenal ulcer, menstrual disorders, etc., due to the extensive research now being carried out in clarifying types from measurements. But for the present we must content ourselves with clinical observations, and from these we can watch for the "glandular type." He is rather a pudgy, overly well-nourished appearing child, but actually flabby. His face, particularly, is well rounded and gives one the impression that a tight constriction has been around the neck for some period and more recently released. Infections of all kinds, particularly colds, hit readily and are thrown off with difficulty. Irritability and emotional instability are very characteristic. A careful history will usually reveal an infant having shown one or more of the symptoms given. A lantern slide to be given later will make the description more clear. Seven of the cases to be reported are very typical of the type.

The selection of a type, while not decisive, is of value preoperatively. When you have a suspicion, a hasty inquiry into the child's history as an infant along the symptoms described, may avert an accident. It must be stressed at this point, however, that no final value can be given to those cases in which the x-ray picture ap-

pears negative. It has been shown repeatedly, where cases of enlarged thymus are in no way affected by an anesthetic, and again, where a status lymphaticus death has occurred where there appeared to be a normal size gland. This should emphasize the futility of routine preoperative x-ray pictures, which a couple of well-endowed hospitals in the East are carrying out in an attempt to make final worth while statements, by comparing the operative status deaths before and since routine treatment for the enlarged gland was instigated. Again, as Aldrich has pointed out, a relief of symptoms is obtained by treatment of the thymus even where it appears normal, showing the size cannot be the final factor.

Status lymphaticus, until further evidence is at hand, should be diagnosed only when the thymic hypertrophy is found. Symmers, at Bellevue, New York City, found a hyperplasia of the thymus in every one of 118 cases, and believes this will have to stand as our present criterion in preoperative control.

Infection is said to have a tendency to reduce the thymus. Our experience has been that a large thymus, apparently giving no trouble, will suddenly react to an infection, causing any or several of the symptoms of thymic disorder. The fact that one function is given as a provider of leukocytes may account for the increased hyperplasia during infection. Perhaps, secondarily, there is an atrophy. But it is important to warn the parent in cases of suspected thymic hypertrophy of the possibilities in case of infection, even a nasopharyngitis, and to advise prophylaxis.

THEORIES

Why, if the thymus is not a gland of internal secretion, do we lay so much stress on the treatment? Undoubtedly, a considerable number of the profession still hold to the view that enlargement of the gland, acting as a mechanical factor, is the most reasonable supposition.

MacLean and Sullivan, in 1926, showed the low blood sugar in cases of status lymphaticus and concluded that the condition probably resulted from a failure of the adrenals.

Perkins stated that it had been repeatedly noted that a thymic enlargement exists in Addison's disease, acromegaly, myasthenia gravis, and rickets.

Marine says: "It is probable that the spontaneous involution of the human suprarenal cortex, which begins during the second week of ex-

trauterine life, may be a causal factor in the hypertrophy of the thymus and lymph glands and lowered resistance in infants," and adds that this does not occur in animals.

Aldrich concludes that "there are three possible causes of the production of symptoms with reference to the suprarenals: 1. Insufficiency in epinephrine production may weaken the vascular systole. 2. Because of the epinephrine insufficiency, a hypoglycemic shock may easily be produced in these patients. 3. Following suprarenal involution occurring after birth, an autonomic imbalance produces a vagotonia which causes many of the symptoms."

At least we can readily agree that the thymus is linked up closely with our endocrine system, and whether it has an internal secretion that functions after birth is questionable. Personally, I would much rather continue with the group that favors an important intrauterine secretory function of the gland and probably less important secondary factor in our endocrines after birth. The mechanical factor, however, seems only occasional and likely only incidental.

What then do we accomplish by our irradiation of the thymus? First, we know that where we have the large gland, we get a definite shrinkage. This point alone would favor the mechanical. But we know further that recent work has shown that in x-ray therapy for cancer it is probably not the direct action on the growth that gives the improvement but a nonspecific factor released by the action of the rays on the tissue. Also, we are told that the gastric secretions can be altered by x-ray treatments, and they need not be given directly over the stomach. Asthmatics have been relieved by irradiation of the spleen. Pylorospasm has been alleviated by x-ray treatment over the pylorus.

Peterson emphasizes the likelihood of the non-specific protein but feels that it is obtained only by raying lymphatic tissue. It would be interesting to try the effect on the thymus by x-ray therapy elsewhere on the body, say over the buttocks.

So, perhaps our result is not directly due to the effect on the thymus, but more to the non-specific protein set free by the x-ray effect on the tissues.

TREATMENT

The treatment has been entirely x-ray in the series to be given. Radium has been used with equal success in two cases. Dr. Rostel having had the entire supervision of this important

phase of the subject, I quote him as follows:

"What is the aim of our treatment? It is to free the patient of the clinical symptoms, such as temporary cyanosis, dyspnea, croupy cough, choking, etc., and besides that to try to secure a reduction in the size of the gland. But the first postulate is, as in every medical procedure, 'nihil nocere.' We know that we have to deal with relatively young tissue, and we further know that the thymus tissue is radiosensitive. Then the best treatment is to use the smallest amount of rays that will give the desired result."

John M. Barnes of Ann Arbor, Michigan, in a study of 63 children, who received treatment from three to eight and one-half years ago, reports that no constant deviation from the normal, in either the physical or mental spheres, could be found in spite of the relatively high dosage used at that time.

George H. Hess reported two cases, in which, after heavy irradiation, Mongolian idiocy developed in the second year after treatment.

Birk and Schalk, Trubingen, Germany, use a field of 4x5 cm., filter 3 to 4 millimeters of aluminum, and give 30 per cent of an erythema dose on the surface equal to 10 to 15 per cent on the gland, and repeat that every four weeks.

Klose and Hotfelden, Hamburg, used a circle shaped field of from four to five cm. in diameter. He gives 50 to 60 per cent of an erythema dose on the surface, which equals 30 to 35 per cent on the thymus, and filters with copper. He has since reduced the amount from 30 to 40 per cent on the surface.

The American writers give usually 25 to 60 per cent on the surface, filtered with 3 to 4 millimeters of aluminum, and repeat every week up to three treatments.

Our technic is as follows: Using a field of 8x6 cm. in the center of the chest, from the suprasternal notch down, with a filter of 4 mm. of aluminum, we give a 30 per cent dose on the surface and repeat that treatment in from five to ten days, depending on the severity of the case.

Our results seem entirely satisfactory as the pictures will show, and it is certainly, from our experience, the smallest amount to accomplish results.

A radium treatment for thymus hyperplasia would be 100 mgm. of radium, subdivided into four tubes of 25 mgm. each, placed at 2.5 cm.

apart in 2 cm. distance from the skin, filtered with 0.5 cm. silver and 1 mm. of brass for 10 hours.

CASE 1—13131. B. A., 6 weeks. (1 slide.) Cc. Vomits feedings, some cough, not gaining. HPI. Two weeks after birth patient began vomiting all or part of most nursings. It was projectile in type. Seeming hunger and fussiness resulted. Cough of a severe but only occasional type began two days before patient was seen. Examination: No fever, flabby, and fairly well nourished appearing infant. Eyes slightly popped. Breathing difficult at times. Percussable thymus. Result. Less vomiting, no cough after first treatment. All symptoms gone after second.

CASE 2—13752. J. K., 8 days. (1 slide.) Cc. Difficult breathing. HPI. Five days after birth it was noticed that patient breathed convulsively and entirely with the abdomen. Lips were slightly cyanotic at intervals. Marked epigastric tug on inspiration. Could not nurse without becoming cyanosed. This continued three days before diagnosis. Result. Definite relief in 24 hours. Had to have a repeat at two months of age when patient caught a slight head cold.

CASE 3—13037. J. A., 3 days. (1 slide.) Cc. Blue spell. HPI. Within 24 hours after birth had an interval of deep cyanosis with difficult respiration lasting about one minute. This was repeated several times in next two days. Condition at first believed to be mucus accumulation in throat. Examination. Perfectly normal infant except for percussable thymus. Result. Two treatments of x-ray with no return after first.

CASE 4—12351. B. F., 13 months. (1 slide.) Cc. Colds, peculiar breathing, twitching of face. HPI. Cold for one week. Developed peculiar breathing day before examination. Began grunting on inspiration and occasionally twitching his face. Some fever. Examination. A pale but seemingly well nourished infant. Inflamed nose and throat. Inflamed ears. Some stridor. No chvostic. No carpopedal spasm, etc. Percussable thymus. Result. Nervous symptoms and breathing difficulty improved by first treatment.

CASE 5—10071. L. W. O., 1 year. (1 slide.) Cc. Cold, breath holder, fever. HPI. Troubled a great deal with gas but not a vomiting baby. Had been subject to rage spasms and breath holding since two weeks after birth. Had an occasional blue spell. Now had cold and some fever. Examination. A seeming well nourished but flabby male. Eyes prominent. Ear drums both bulging. Nose and throat inflamed. Slight stridor on inspiration. More marked when crying. Temperature 101° (rectum). Result. Ears and cold dragged on for two months. Seems to have improved in disposition. Rage spasms less frequent and not so severe. Needs further treatment but mother is satisfied as is.

CASE 6—10711. B. J., 14 months. (1 slide.) Cc. Convulsion, irritable. HPI. "Colic" for nine months. Constipation since birth. Had convulsions

first ten days before seen. Had two in the interval. Always began by patient giving a sharp cry, holding his breath, then becoming rigid and somewhat cyanotic. Mother states he does not seem to breathe during attack. He had had a definite crowing sound to his cry for some time. Examination. Definitely rachitic, pale, appearing well nourished but flabby. Tonsils chronic inflamed. No signs of tetany, percussable thymus, dentition. Result. Crow gone, no more convulsions, disposition improved following second treatment.

CASE 7—13686. R. A. J., 2 months. (1 slide.) Cc. Snoring, cough, vomiting. HPI. Patient has gained consistently on breast feedings. About three weeks ago began vomiting after feedings, more regurgitant in type. Has snorted on inspiration occasionally since soon after birth. Coughing past month, three to four times daily, spasmodic in type, no fever. Bowels O. K. Subject to rage spasms with stiffening of entire body. Examination. Negative except for percussion of thymus enlargement. Result. First treatment relieved symptoms so completely that so far it has been impossible to get coöperation for more. Eventually an infection may force parents to it.

CASE 8—Thymus and Congenital Heart. 11637. H. D., seven and one-half months. (2 slides.) Cc. Blue spells, very short of breath, shrill cry on intake of breath. HPI. Difficult to begin life after birth. Called a "Blue Baby." Lips have remained blue since. At six weeks the patient became colicky and would turn dark. Vomiting was projectile and frequent after nursing. Been diagnosed cardiac and on digitalis when seen. Breathing became more difficult with "crow" on inspiration. Examination. Slightly cyanotic, undernourished. Eyes tend to bulge. Position slight opisthotonus and rigid. Shrill cry on each inspiration with intercostal and angle tug. Percussable thymus. Heart sounds and size normal. Result. Three treatments shrunk the gland and lessened the crow. Vomiting and spells of opisthotonus better for two weeks. Returned. Patient died of congenital heart one month after last treatment.

CASE 9—10944. P. McL., seven weeks. (2 slides.) Cc. Vomiting, gas, blue spells. HPI. Two weeks before had begun to belch and pass a great deal of gas. Vomiting of a projectile type began at same time. One week later, following a shrill cry, the patient turned real blue. Had several attacks since. Examination. Pale, glandular type, somewhat dehydrated, percussable thymus. No peristalsis seen. Rickets in evidence. Result. Vomiting ceased day after first treatment. Some regurgitation but no cyanotic spells or stridor after second.

CASE 10—11269. R. M., ten months. (2 slides.) Cc. Convulsions, fever. HPI. Convulsions began one half hour before treatment. Was benefited by mustard bath. Caught cold two days before. Has crowed on inspiration when laughing or crying since three months of age. Has not gained properly. Mother had been warned of possibilities from an infection, so brought patient right in. Examination. Somewhat undernourished, rachitic, pale, definite

naso-pharyngitis, percussable thymus, with angle and intercostal drag. Marked groove of chest. Considerable exaggeration of bowing of legs. Result. Crow cleared entirely after first treatment. No return of convulsions. X-ray shows change in gland.

CASE 11—11759. R. G., three weeks. (3 slides.) Cc. Shrill intake of breath, vomiting. HPI. Patient vomited projectily practically every feeding for past ten days. Mother had noticed a sound like croup on each breath intake for about the same time. Patient was very fussy at the breast and acted "colicky." Examination. Somewhat undernourished, slightly dehydrated. Percussable thymus was only finding. No peristalsis visible even after eating. Result. Decided improvement after first treatment. No vomiting after second. Slight stridor persisted. Did not hear from case for one month. There has been some return of vomiting. Further treatment given with checking of vomiting.*

DISCUSSION

DR. H. E. FRENCH (Grand Forks): Dr. Pray has given us a very interesting paper, interesting if for no other reason than that it shows we have no adequate knowledge of the thymus and the group of symptoms that are associated with it. It is probably true that there is no other question in medicine anywhere, about which we have so great a divergence of opinion. This lack of agreement begins with the origin or the embryology of the thymus and extends through its structure, its physiology, its pathology, and the symptoms that are attributed to its disease. Recent writers have said that the gland is abnormally large in 40 per cent to 50 per cent of all newborn infants; such large percentages make us wonder what is the normal size. But Dr. Pray has illustrated these facts, and it would weary you to have me continue.

Briefly, I am inclined to think that the thymus, in the human at least and after birth, is simply a lymphatic organ. Not only its structure, but its growth curve, its development, and its involution, speak for this. I am inclined to think that it has no internal secretion.

How are the symptoms that have long been associated with it to be explained? There are two main theories, toxis and pressure. In support of the toxic theory it is said:

1. That the whole complex, in serious cases at least, with the extensive lymphatic enlargement and the blood picture, speaks for a disturbed internal secretion.

2. That the frequent presence of eczema is suggestive; but eczema is common and seems to have other causes.

3. That symptoms are sometimes found without enlargement of the gland, and enlargement without symptoms.

4. That recurrent enlargement of the gland is not infrequently associated with no recurrence of the symptoms.

5. That relief of the symptoms can be secured

*Remainder of cases omitted because of lack of time.

by removal of the gland, or by x-ray treatment. But the removal at least should be quite as good evidence for the pressure theory.

In support of the pressure theory it is pointed out:

1. That relief of symptoms can be secured by removal of fixation of the gland.

2. That in the series of events leading up to the spasm, the emotion, the crying, etc., it is difficult to see how a possible secretion could be liberated so quickly as to cause the symptoms; it is much more easy to suppose that congestion, associated with the laboring chest, diaphragm, and heart, could cause pressure.

3. That attacks are sometimes brought about by certain positions, that is, holding the child with chest and neck extended and perhaps under pressure from without.

4. That some of the symptoms seem to be quite parallel to the cough of aneurysm produced by irritation of the vagus nerve.

5. That the bronchoscope demonstrates constriction of the trachea directly; but I should not stress this point.

Personally I am inclined to the pressure theory, both because I consider the thymus a lymphatic organ and because of the arguments above. I think, too, that there is a good deal to the idea of vagatonia. Many of the symptoms can be so explained. The vagatonia may well be associated with the involution of the adrenal.

It is interesting to speculate on how and why the x-ray can bring such quick relief. Gradual or final reduction of the gland should be expected, but why the sudden relief? Possibly it is due to a nonspecific protein reaction in the lymphoid tissue, as suggested by Aldrich and quoted by Dr. Pray. At any rate we have here an interesting question for further study.

The paper is interesting, and it is important in that it calls attention to a treatment that is promising.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of September 10, 1930

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, September 10, 1930. Dinner was served at seven o'clock and the meeting was called to order by the President, Dr. Emil S. Geist, at 8 P. M. There were 42 members present.

Minutes of the May meeting were read and approved.

The Secretary also read the report of the Executive Committee meeting of August seventh and a motion was carried that this be adopted.

Upon ballot Drs. F. L. Adair and F. W. Schultz, formerly of Minneapolis, and Dr. H. C. Cooney of Princeton, were elected to Honorary Membership in the Academy, and Dr. F. F. Callahan of Pokegama Sanatorium was elected to Associate Membership.

Owing to Dr. Alexander Stewart's inability to be present, his thesis on Serotherapy in Scarlet Fever was not read at this meeting.

Dr. A. A. Zierold (Minneapolis) then read his thesis, entitled "Morphine as a Diagnostic Agent."

DISCUSSION

DR. A. T. MANN (Minneapolis): I think this paper brings up a very interesting subject. I remember when I first came here the older surgeons spoke about the differentiation of rigidity by the use of

morphine, but they certainly did not work with it in such a careful way or go so far into its logical basis. There is a great deal of truth in the paper. I think our old idea of the withholding of morphine in abdominal conditions pivots around the fact of whether a thorough examination has been made before the morphine has been given. Personally, I can't see any reason at all for withholding morphine after a thorough and careful examination has been made and diagnostic judgment has been used. There is no objection at all to administering morphine at that time and I think it is a very valuable thing.

Abdominal pain and abdominal tenderness are two different things. There was nothing brought out in the paper in regard to tenderness. We do get tenderness in various places from troubles at a distance. For example, we can have the tenderness that is ordinarily associated with gall bladder or with ulcer of the duodenum, from appendicitis or from an inflammation in the pelvis because of the distribution of the lymphatics. The tenderness which we ordinarily get with appendicitis comes apparently quite definitely over the first lymphatic group at the base of the mesentery, that is, under McBurney's point. The appendix travels around like the spoke of a wheel, but the tenderness stays where the root of the appendix is. If that continues for some time and some of the inflammation leaks through this first bunch of glands into the next ones, which are just to the right of the aorta, then we have a second point of tenderness, Morris' point of tenderness about one and a half inches from the midline, that is, over the juxta-aortic glands. If the inflammation travels up this chain of lymphatics it may reach the upper glands of this chain at the

level of the duodenum, and give a deep point of tenderness suggestive of the tenderness elicited from a duodenal ulcer, or sometimes that from an infected gall bladder.

The question I should like to ask the essayist is, what influence these changes would have on the abdominal rigidity and the influence of the morphine on these changes.

DR. W. F. BRAASCH (Rochester): The paper this evening is a most interesting one and the doctor is to be congratulated upon his thesis. I was particularly interested in one case in which epigastric pain was predominant, and after the administration of morphine the pain was referred to the appendix. The relationship between epigastric pain and appendicitis is clearly emphasized.

As far as the urinary tract is concerned, the areas of pain reference as described by Head and others have not proven to be of value in the localization of pain. With stone in the ureter the pain is almost always referred to the renal area. After the administration of morphine the pain either remains in the kidney area or it is stopped. I do not recall any case where the renal pain was transferred to the ureter after the administration of morphine. As far as the bladder is concerned, bladder pain very seldom has to be differentiated and therefore is not strictly applicable to these theories.

Somewhat related to this subject is the work of Learmonth on disturbance of innervation of the bladder, recently published in "Surgery, Gynecology and Obstetrics." Bladder innervation and various types of pain and diseases of the bladder are discussed together with original observations on physiology. We have observed a number of patients with unbearable pain referred to the bladder, who were completely relieved by sympathectomy without disturbing the mechanical action of the bladder. The whole subject of the innervation of intraabdominal, as well as of the urinary organs is one of great interest and I believe there will be much progress made in this field.

DR. E. L. GARDNER (Minneapolis): I have seen some of Dr. Zierold's work at the General Hospital and know that it is good clinical observation. Almost twenty years ago I had the privilege of being with Dr. J. W. Bell for a while, and there were two procedures which he regularly used. One was the old-fashioned hot tub. A patient with an acute abdomen was put into a hot bath and the abdomen palpated while in the tub; this often relieved rigidity and helped to localize the lesion. The other method was to give one-fourth of a grain of morphine and proceed with the examination. This diffuse type of pain and generalized rigidity seems to occur in certain high-strung individuals. Even in chronic conditions, such as in duodenal ulcer, it is not infrequent to have the primary pain referred to the upper epigastrium. Very soon, if this patient is irritable, we sometimes have a "stopping over" of pain and muscle spasm to segments above or less often below. By taking a very careful history in these cases we can often arrive at a pretty good diagnosis without laboratory procedures.

I think Dr. Zierold's contribution is a good one.

It brings to us an old procedure better explained in modern physiologic terms.

DR. J. S. GILFILLAN (St. Paul): This paper is a very valuable one and I think it explains a little more clearly to us why we get the alteration in abdominal rigidity after giving morphine. We used to feel a little hesitancy in giving morphine in acute abdominal conditions, and my own idea was that there was some danger until we had decided definitely whether or not an operation was to be done. One difficulty in giving morphine is to get the patient to consent to operation after you have taken the pain away. I was wondering, as I listened to the paper, if the same procedure might be applied to extra-abdominal conditions.

DR. ZIEROLD (closing): You have all been very generous and I appreciate the kindly consideration that you have shown me. The questions are all very fair ones and I think can be reasonably well met.

Dr. Gilfillan commented on the possibility of using some such procedure as this in the diagnosis of joint conditions. I have been trying to check some of the chronic joint conditions but haven't enough clinical material as yet. I do know that in hip joint disease morphine will resolve the spasm to its proper segment. I have found it to work very satisfactorily in acute joint infections, particularly in children.

Dr. Mann presented the question of pain and tenderness. I purposely avoided stressing pain and tenderness. They are more or less an incident in muscle spasm. As a result of the pain there is a purposeful spasm. The simple contraction of muscle not attended by pain is a simple reflex. As Dr. Mann so well noted, the pain and tenderness may occur in remote and rather bizarre places.

Dr. Braasch raised again that same point with regard to tenderness, and brought up very aptly Head's theory in regard to referred pain, which unfortunately does not always work out. It is interesting to hear of Dr. Learmonth's work on the bladder nerves, particularly when one recalls the difficulties to be overcome.

Dr. Gardner mentioned Dr. Bell's observation, of which he had told me before, and which we have discussed previously. He reiterated what I meant to say in the beginning, that is, that the clinical phase of this phenomenon is not new.

Dr. Ulrich asks as to the effect of morphine; as to whether it reduces or heightens the threshold of reflex stimulation. Morphine affects only the cortical centers. It has no effect on the spasm which is an exaggerated spinal reflex.

Dr. Wallace H. Cole reported a case of "Leg Lengthening of the Tibia in Infantile Paralysis" and showed numerous lantern slides taken before and after the operation.

The meeting adjourned.

R. T. LAVAKE, M.D.,
Secretary.

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—1309.

The case is that of a man, 32 years old, admitted to the hospital on August 31 at 12:15 A. M. He died at 2:35 A. M., the same day. He was brought to the hospital by a physician who gave the following history. The patient had infantile paralysis at the age of six with resulting deformity of the right lower extremity. August 24, developed bilateral peritonsillar abscesses. Drainage of pus from both sides on August 26. He was getting along nicely until swelling appeared at the base of the neck on August 30. The temperature rose to 103° and the patient became acutely ill. White blood cells 25,000.

Examination showed a large, well developed male adult in excellent condition except for local change in the throat. Entire base of neck in anterior portion was swollen, red, and very hard. Pitting of the skin was present. The submaxillary region was soft. The mouth could not be opened beyond 1.5 cm. The voice was reduced to a whisper and breathing was done with marked effort. Laryngeal and bronchial noises, due to mucus. Chest negative except for loud noises transmitted from the throat. Diagnosis: acute cellulitis of neck with partial obstruction due to laryngeal edema.

Taken to operating room for incision and given nitrous oxid anesthesia. During induction patient suddenly ceased breathing and became cyanotic. Tracheotomy attempted. Large quantity of foul pus rolled out. Trachea not incised. Artificial respiration and adrenalin failed. After death the abscessed cavity was explored with the finger and apparently was partly subcutaneous but communicated with other facial planes. Extended superiorly above the level of the thyroid, inferiorly below the upper border of the sternum for 2 to 3 cm.; laterally to the sternomastoid muscles.

Post-mortem report. Atrophy of the right lower extremity. The area between the sternomastoid muscles on the anterior aspect of the neck from the chin to the sternum is swollen and indurated. There is redness of the skin. Incision into the indurated area shows a cloudy fluid but no definite pus. Cloudy swelling of the heart, liver and kidneys. Acute mediastinitis.

Diagnosis. Ludwig's angina following peritonsillar abscess.

Comment. A peritonsillar abscess frequently

spreads throughout the soft tissues of the neck. The exudate is either purulent or serous. A high percentage of these cases are fatal from toxemia and septicemia.

Autopsy—30—1453.

The case is that of a white man, 74 years old, who was admitted to hospital 7 A. M., September 30, 1930. He had been treated at the hospital previously for endocarditis and auricular fibrillation, which he had had for years. At 10 P. M., September 29, he was suddenly seized with severe pain in the right lower abdominal quadrant. He later vomited several times and had a bowel movement. He was brought to the hospital in shock. The findings at this time were general abdominal tenderness with more marked tenderness in the right lower quadrant over the appendiceal area. The white blood count was 10,400. Blood pressure 110/90. A diagnosis of appendicitis was made. At 9 A. M. he was operated upon. A small portion of the cecum and ascending colon was discolored. The appendix was somewhat involved in the process. This portion of the bowel was brought out through the wound and left in situ.

Postoperatively the portion of protruding bowel became definitely gangrenous, lost its luster, and on October 1 was excised. The subsequent course was rapidly downward.

Post-mortem report. The peritoneal cavity contains 500 c.c. of serosanguinous, foul smelling fluid. The loops of the ileum are adherent by fibrinopurulent exudate. The heart weighs 580 grams; there is an old mitral stenosis with hypertrophy and dilation of both ventricles and both auricles and a mural thrombosis in the left auricle. The superior mesenteric artery is occluded by an embolus. There is hemorrhagic infarction of the entire ileum and of the ascending colon. There is an infarct of the right kidney.

Diagnosis. Mesenteric embolism with infarction of the intestine, due to a thrombus in the left auricle.

Comment. In old decompensated hearts of any anatomic type there frequently develops an auricular thrombosis. The thrombi may become detached and produce embolism in various situations. Mesenteric thrombosis is not an uncommon occurrence under these conditions.

Autopsy—30—1033.

A woman, 29 years old, had had diabetes for about two years but received no treatment. Her weight had decreased to 85 or 90 lbs. About one year ago treatment was begun (diet and insulin) and she gained about 25 lbs. in weight during the year. Examination six weeks before death showed no sugar or ketone bodies in the urine and she was in good condition.

On July 3, she developed a severe cold with vomiting and drowsiness, which rapidly passed into coma. Her temperature was subnormal. The urine showed large amounts of sugar, acetone, and diacetic acid. Van Slyke, 50. She was given glucose and insulin and gradually the urinary findings approached normal. At 2 P. M. on July 11 she woke from the coma. Two hours later her urine was free from sugar but it contained many casts and much albumin. Her pulse was 150 at this time. At 4 P. M., July 11, she suddenly died.

Post-mortem report. Right lung 525 grams, left 575 grams. Each lung contained a large number of small abscesses from which staphylococci are cultured. There is cloudy swelling in the liver, kidneys, and heart. The pancreas shows no gross disease. Microscopically no hyaline islands are found in the pancreas.

Comment. This case illustrates the result of infection in a diabetic. Abscesses in any situation are quite apt to bring on an attack of coma and death, even when insulin is used in ordinary amounts. Frequently the islands of Langerhans in a diabetic show no microscopic changes.

Autopsy—30—1037.

The case is that of a woman 57 years old, admitted to the hospital June 28, and died July 12 (14 days). She complained of dyspnea on exertion, varicosity of legs, abdominal hernia. She had noticed dyspnea on exertion for a long time. Became much worse about three weeks ago. Tired very easily; smothering feeling over precordium, radiating to left scapular region, especially on exertion. Feet would swell when standing a great deal. Dyspnea more marked when lying flat on her back. Varicosity for 25 years. Had worn rubber stockings for several years. No ulcers. After heart attack one week ago she could not stand because of sharp pain in the legs, worse below the knees.

Abdominal hernia 25 years ago, during pregnancy; small at first, gradually became larger; could not be completely reduced. Wore a special corset for it. Some pain associated with it at times.

Scarlet fever, chickenpox, mumps. No history of rheumatic fever; no chorea; no tonsillitis. Slight impairment of hearing, left ear. Two bad lower teeth. Coughed in morning; raised a little sputum, no blood. Sweats while asleep during the last two weeks. Appetite poor three weeks, good before that. Pork did not agree with her. Very little gas. Had to take laxatives. Nocturia one to two years. Menstrual history negative. Grandparents all died of old age. Mother living, 77, father dead at 73. Mother has had stroke; father died of kidney trouble. No cancer in family history. Occupation: housewife.

Very obese. Blood pressure 145/90. Slight enlargement of tonsils with injection. Marked dyspnea when asleep. Few râles in bases. Heart enlarged to left, not very much. No murmurs; pulse regular. Large umbilical hernia about ten inches in diameter; could not be completely reduced; contained bowel. Varicosities with possible thromboses on inner aspects of both legs and thighs, tender to palpation. Reflexes negative.

Urine: occasional pus cell. Blood: hemoglobin 80 per cent; white cells 8,000. Blood urea nitrogen July 7, 68 mg., to 107.2 mg., on July 10. P. S. P. 37 per cent. Eye ground examination: opacity of the vitreous; peripheral lenticular opacity; arteries small and tortuous; veins engorged; many hemorrhages in right eye; same change in left except for absence of hemorrhage; slight blurring of discs.

X-ray: bilateral pleural effusion; marked cardiac enlargement, aortic or hypertension type, second stage.

July 4, pulse rapid, almost imperceptible; cyanosis, dyspnea, pinched expression. Morphine given. July 6, râles in both bases; very restless; slight edema of back. July 7, condition unchanged. July 11, growing weaker; blood pressure 90/70; heart rate 120; râles in bases; patient had anxious expression. Grew progressively worse; abdomen developed marked distension (possible peritonitis). Died July 12, 6:20 A. M.

Medications: morphine sulphate; tincture of digitalis; limited fluid; S. S. enema; proctoclysis; intravenous glucose; caffeine sodium benzoate.

Post-mortem report. Well developed, obese; weight 220 lbs.; slight edema of the lower extremities and back; cyanosis of the finger tips and lips; no jaundice.

The heart weighs 475 grams; old mitral stenosis; fresh rheumatic vegetations on the mitral leaflets. The aortic valve shows slight thickening, moderate old rheumatic infection and numerous recent rheumatic lesions. The tricuspid also shows fresh rheumatic lesions on a slightly thickened valve. Definite hypertrophy of the right auricle and right ventricle; slight hypertrophy of the left ventricle. Marked edema of the lungs; old healed tuberculosis of the left apex. The spleen shows marked passive congestion with a small white infarct and a few old healed miliary tubercles. The liver shows chronic passive congestion and fatty metamorphosis. The gall bladder contains a pigmented stone. The kidneys together weigh 310 grams and show coarsely pitted surfaces; old infarct in right kidney.

Diagnoses. Old rheumatic mitral endocarditis with fresh rheumatic infection. Slight old rheumatic endocarditis of the aortic and tricuspid valves with fresh rheumatic infection. Cardiac hypertrophy and dilation with chronic passive congestion of the lungs, liver, spleen, and kidneys and pulmonary edema. Old infarcts of the spleen and kidney. Old healed tuberculosis. Umbilical hernia.

Comment. There was no history of rheumatic fever but it is known that, in about half the cases of rheumatic endocarditis, no history of arthritis is obtained. Death was due to congestive heart failure resulting from mitral stenosis. The time of onset of the original rheumatic endocarditis cannot be determined.

Autopsy—30—1390.

The case is that of a white man, 55 years of age, admitted to the hospital July 7, 1930; he died ten days later. He complained of pain in the epigastrium, anorexia, loss of weight, and weakness. He stated that the pain had been present since April, 1930, and that it was of a boring character and radiated to the back. There was also some radiation to the upper portion of the abdomen and the pain occurred both night and day. Pain was increased by food and worse when lying on the right side. He said that he had lost about 25 lbs. since the winter of 1929. The weakness was gradually increasing since April, 1930. The gastrointestinal complaints had no relation to food.

His past history, marital history, and family history were all essentially negative. He was a farmer. Examination revealed a well built, fairly well nourished man, complaining of pain and weakness. He seemed to show some mental dullness. There was increase of vocal fremitus and whispered voice over both apices. There was also dullness over both apices extending down to the lower border of the second rib anteriorly, and on auscultation increased whispered voice over both of these areas with bronchial breathing and fine crepitant râles over the left apex. There were also some of these findings over the right apex. The heart was essentially negative. The blood pressure was 115/70. The liver was slightly palpable and there was a mass in the left upper quadrant extending to the midline and down to the level of the umbilicus. It was stated that the mass did not move with respiration. Muscles of the abdomen over this area were slightly rigid. The vertebral column was negative.

Blood, July 8, 1930: hemoglobin 67 per cent; red cells 3,630,000; white cells 12,250; polymorphonuclears 73 per cent; lymphocytes 25 per cent; monocytes 2 per cent. Blood urea nitrogen 16.8 mg. Sputum: no acid fast bacilli found; many repeated examinations for tuberculosis were negative. Phenolsulphonephthalein test July 22, 35 per cent first hour, 20 per cent second hour. Blood culture July 29 was negative. Gastric analysis with histamin showed the presence of free HCl before and after histamin. A blood culture July 24 showed short chains of large streptococci. Stool essentially negative. August 27, another blood chemistry examination revealed urea nitrogen of 112 mg.; sodium chloride 660. September 5 van Slyke 46 mg. P. S. P. repeated at this time showed 15 per cent in one-half hour, 7 per cent in one hour, and 5 per cent in one and one-half hours. September 8, urea nitrogen was down to 24.26; van Slyke 43. September 16, hemoglobin 25 per cent; 2,200,000 red blood cells. Urine July 11 showed specific gravity 1012; acid; no sugar or albumin; numerous hyaline casts and a few white blood cells in the sediment. Repeated urine examinations showed consistently the same picture.

X-ray of chest July 8 indicated that there was pulmonary tuberculosis of an incipient and fibroid type. A gastrointestinal study on July 9 indicated that there was extragastric pressure from enlarged liver and spleen. A pyelogram on July 17 indicated that there was probable hypernephroma of the left

kidney, possible polycystic kidney on the left, secondary erosion of the upper lumbar spine and secondary distortion of the ureter. July 24, a pyelogram following the injection of uroselectan demonstrated a deformity previously described. It was noted that the kidney pelvis was fairly normal. August 6, examination of the colon by barium enema showed no evidence of intrinsic disease, although it was stated that disease in the region of the splenic flexure could not be entirely ruled out. August 13, examination of the colon by barium enema showed that there was displacement of the colon. August 26, no evidences of metastases in the chest. Kidney-ureter-bladder x-ray September 12 showed the right kidney to be apparently normal but the left kidney could not be definitely made out. There was no definite evidence of stone in the urinary tract but erosion of the upper lumbar spine was considered much as at the previous examination.

Urography July 17 indicated that the most probable diagnosis was deformity of the kidney with displacement due to pressure from an extra-renal mass.

Medications and procedures: nose and throat cultures were taken. Vena puncture was performed. S. S. enemas were given. Ten per cent glucose intravenously was given. Hypodermoclysis was performed. P. S. P. tests were performed. Normal saline given intravenously. Uroselectan was given intravenously. Gastric expression with histamin performed. Sodium bromides gr. 40 and mineral oil gm. 1 were given. August 9, the administration of thymus extract, 1 c.c. daily, was commenced; the extract was given intramuscularly and was continued until the date of exitus. Further intravenous therapy with 10 per cent glucose and normal saline. Hypodermoclysis also repeated. From September 4 until the day of death intravenous therapy of 10 per cent glucose was given almost daily.

July 10, it was noted that the patient was complaining of epigastric pains and had an emesis repeatedly during the night. July 15, it was noted that he complained of epigastric pain when he ate and that an application for admission to Glen Lake Sanatorium was made. August 25, it was noted that the patient was vomiting frequently and that his fluid intake was insufficient. Also noted that he was then getting thymus extract intramuscularly. August 27, noted that the patient was failing rapidly and that he was vomiting continually. August 30, it was noted that the mass in the abdomen was decreased markedly in size but that the patient was practically moribund. On September 15, it was noted that the patient had been in about the same condition for the preceding week, but that the urea nitrogen level had dropped to normal following the continuous administration of glucose intravenously and saline subcutaneously. It was also noted on this date that the patient had developed edema of the left leg following intravenous glucose into the saphenous vein.

Post-mortem report. Emaciated; marked pitting edema of the entire left lower extremity; 300 c.c. of clear straw-colored fluid in each pleural cavity; old adhesions at each apex. Heart weighs 300 grams; no gross disease. Hypostatic congestion of the lungs; old healed tuberculosis of the right

apex. Very small area of old healed tuberculosis in the left apex. Spleen and liver normal.

In the region of the left kidney is an enormous tumor 18x11x7 cm. The kidney is almost completely replaced by the tumor. The ureter is displaced medially, so that its course is along the abdominal aorta. The tumor has extended into the duodenum, into the bodies of the first and second lumbar vertebrae, and into the left psoas muscle; there is also extension into the inferior vena cava.

Diagnosis. Malignant nephroma (hypernephroma).

Comment. These tumors are now usually called malignant nephroma or carcinoma of the kidney; they frequently develop to a large size without producing important changes in the urine.

Autopsy—30—1328.

A man, 37 years old, was admitted to hospital July 26, 1930. Since March, 1930, he had suffered with a backache and fever of low grade. He would work a few days and then rest for a few days. On June 10, he went to bed and remained in bed after that. Shortly after June 10, his left testis began to swell. He was given hot packs. A tender spot developed in the perineum just behind the serotum in the mid line, which was indurated and extended forward along the urethra. He was unable to pass urine and was catheterized.

On admission to the hospital, July 26, he complained of backache, which radiated into the left groin. The left testis was greatly swollen and there was an indurated area in the central part of the perineum. A needle was passed into the perineal mass but no fluid could be withdrawn. The mass increased in size and the penis became swollen and enlarged. A suprapubic cystotomy was performed July 28 and external urethrotomy of the posterior urethra. The foreskin was slit. There was much sloughing from the wound in the perineum and the skin of the penis became undermined and necrotic. The wound in the perineum began to fill in with what was thought to be granulation tissue. A biopsy of this tissue on August 25 showed it to have the structure of adenocarcinoma. On September 2 the penis was amputated. The following day the patient's temperature rose, his pulse became fast, and the respirations became shallow. Later his pulse became very weak. Death September 3.

Postmortem report. The body is well nourished but shows evidence of recent loss of weight; edema of the right ankle. The suprapubic cystotomy wound is draining urine. Recent amputation of the penis. Sloughing wound in the perineum; marked induration of the perineum. Edema and congestion of the lungs; two metastatic nodules, about 4 mm. in diameter, in the right lower lobe.

The liver weighs 2,300 grams and contains a large number of metastatic tumor nodules. Retroperitoneal and aortic lymph nodes are greatly enlarged and filled with tumor metastases. Extensive metastases in the left spermatic cord and along the course of the left spermatic vein.

The left kidney weighs 1,325 grams and is largely replaced by a large tumor. The tumor shows extensive necrosis and is yellowish in color in most

parts. It is about 15 cm. in diameter. The tumor tissue has apparently extended from the left kidney along the spermatic vein, down the left spermatic cord, and into the left epididymis and the perineum.

Microscopic sections of several parts of the tumor show it to be a typical nephroma (hypernephroma).

Diagnosis. Nephroma with metastases.

Comment. This case is unusual in that the initial symptoms were due to extension of the renal tumor into the perineum. We have no records of any similar case. The urine is normal in a fair percentage of cases of hypernephroma.

Autopsy—24—587.

A colored woman, 41 years old, was admitted August 18, complaining of epigastric pain, radiating up into the shoulders, nausea, and vomiting. The attack began on the day of her admission, with severe epigastric pain which radiated to both shoulders and down the spine, and came in paroxysms. The pain was so severe that the patient doubled up in bed during the paroxysms. She vomited a number of times during this attack.

She had had several such attacks during the past three years; but none so severe as the present one; five attacks during the past month. In some of the attacks there was a chill with fever. No history of jaundice. The patient was constipated and greasy foods caused abdominal distress. She had had pneumonia, small pox, and diphtheria. Nine miscarriages at 2 to 4 months; two children; one died in infancy of pneumonia; the other living and well.

Examination showed extreme tenderness over the whole epigastrium, more marked under the costal border; rigidity only above the umbilicus. Temperature 97° to 102°. White blood cells 10,000; differential normal. Urine: a trace of bile; albumin +. Wassermann negative.

On the third day in hospital she developed signs of pneumonia. The abdomen was rigid throughout. Temperature 102°. White blood cells 12,800.

August 25, patient was apparently much better. Abdominal tenderness practically gone. Bile pigment in the blood plasma.

August 27, chest practically clear. Patient drowsy.

September 1, patient had become comatose. Catheterized specimen of urine showed a large amount of sugar, some acetone, and diacetic acid. Blood sugar .78 per cent. Death September 1.

Postmortem report. Necrosis and gangrene involving a large part of the pancreas. The gall bladder contains 10 calculi of different sizes. There is a small calculus about 5 mm. in diameter in the common bile duct about 2 cm. from the ampulla, which partially occludes the passage. The biliary ducts are slightly dilated. Fatty degeneration of the liver. Edema and congestion of the lungs. Cloudy swelling of the liver, kidneys, and heart.

Diagnosis. Gangrenous pancreatitis.

Comment. Pancreatitis of this type is usually associated with cholelithiasis. It is highly probable in this case that a calculus became lodged temporarily in the ampulla and caused the passage of bile into the pancreatic duct. Small calculi are much more apt to do this than large calculi.

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MINNEAPOLIS, NOVEMBER 1, 1930

THE INTERNATIONAL MEDICAL AS- SEMBLY OF NORTH AMERICA AND THE INTER-STATE POSTGRADUATE MEDI- CAL ASSOCIATION

The combined meetings of these two organizations were held, and very successfully, if we are to judge by the large attendance and good management, at the municipal auditorium for four days, October 20 to 24.

The organization has been successful in its efforts to teach medical men something more than they already know. This is conducted at considerable expense, which is paid largely by those in attendance. The auditorium seats ten or eleven thousand people, and if we are to judge by appearances it would seem that there was a two-thirds house on a recent visit to the convention hall. Registration, we believe, shows about four thousand members.

The men at the head of the medical assembly are men who have watched the growth since its organization and to them is due the credit of a skillfully managed convention of an efficient organization. We believe the medical men in attendance thoroughly enjoy a meeting of this sort where they may wander about seeking and finding friends of long standing, chatting and passing on, and later listening to those papers of interest to them. It is an inspiring sight to see a large body of medical men who are earnestly at work in their business of medicine. We found it a very desirable feature that no discussions were permitted. The speaker has the full attention of the house. Had the officials permitted discussions there would be a turmoil in a short time. The average doctor who attends such a meeting is rather apt to discuss the papers on the spur of the moment, and usually in a divergent way. He has not his subject condensed in such a way as to stay to his point and the result is unsatisfactory to all. Dr. Peck and Dr. Henes are deserving of much credit for the efficient method employed in conducting the meeting. The convention closed Friday evening with a banquet at the Nicollet Hotel at 6:30 P. M.

We find it impossible to select all of the leading men and to give their qualifications the praise and publicity which they so well deserve: there are so many fine men here from so many different parts of the country, and each deserves much praise for his particular part in the success of the meeting.

All the men in attendance well remember Dr. George I. V. Brown of Milwaukee, who sits from 7:30 A. M. until 11:30 or 12 P. M. in his chair without leaving, except during recess, and yet doesn't object a bit, but is cheerful and declares that he would be lost if he couldn't attend all of the meetings. We think of him as a man of interesting mind and brain. He gives his services and work unflinchingly and cheerfully at all times. It is to be regretted that there are not more physicians who show their willingness to do work of this sort for medical societies.

Many are careless about time and place and rules, and this is in marked contrast to these men of success who support such meetings as this. We enjoy meeting and associating with these men who accept the task assigned to them whether it be that of writing and delivering a paper or of the management of the meeting; these papers and these men are of world-wide interest and well worth seeing and hearing.

These men of responsibility vary their lives by engaging a steamer and taking a trip abroad during the summer months. They benefit by rates in traveling in this way and enjoy all the comforts possible while visiting the foreign countries and taking their families with them in some cases. We wonder at their means of overcoming difficulty of the foreign tongue on these trips, but no doubt that is solved in the same masterful way that they meet other problems. We are glad that they have the opportunity to avail themselves of this means of travel; it is only right that they should do so.

It was a pleasure to see again Dr. William D. Haggard, President, and we found him to be well capable of the responsibility of his office. He is an example of the type of man that is necessary to such organizations. Dr. Haggard, too, recalled his first visit to Minneapolis many years ago when the editor undertook to show him the sights of Minneapolis from his recently acquired air-cooled Knox automobile. We drove around the city and thoroughly enjoyed ourselves. Anyone who remembers the anatomy of the Knox knows it was the most cumbersome, noisy piece of machinery imaginable, but of course we were quite unconscious of it as such then, and the sightseeing trip was a marked success, as we thought. Dr. Peck, managing-director, is the same Dr. Peck of old that we have all known during the life of the association and he certainly has a good managing brain, as is manifested by the meetings, everything being interesting and instructive. May he live long and his power increase.

We hope that the doctors throughout the country may have the privilege of having Dr. Peck and his associates conduct many more meetings of this sort, so that we may see them and associate with them and enjoy them without the confusion that so frequently attends such meetings. If they are not careful we will invite them here again!

Much praise has been given Minneapolis in having such a fine convention hall for this meeting. We know of no other place that can afford

such spacious and convenient facilities in this respect. Many of the attending physicians have expressed themselves that they have never had the pleasure of enjoying a finer convention hall; it is well arranged and well equipped with amplifiers and microphones which simplifies the speaking and hearing. The meeting hall and the smaller side halls are all of great benefit to the needs of a convention, and Minneapolis is glad to have such a meeting place to offer to this and other conventions. We hope that Dr. Peck and his board of managers may be in charge for many years and we have every reason to anticipate that they will, so we will not dwell on any possibility of change.

A NEW SERVICE

The publishers of THE JOURNAL-LANCET are pleased at this time to announce a new service to its readers.

We have reason to believe that you have all enjoyed and benefited by reading the Clinical Pathological Conferences which we have been publishing in every issue for over a year. At the request of a great number of our readers we have made the necessary arrangements with Dr. E. T. Bell, Professor of Pathology at the University of Minnesota, to publish these in reprint form.

These reprints will contain approximately two hundred and fifty cases each year and in the course of several years will prove to be an invaluable book for reference.

These reprints will be furnished quarterly in an indexed loose-leaf form and can be supplied at a very moderate charge. Those desiring more information on this subject may write to the publishers of THE JOURNAL-LANCET.

SIXTIETH ANNIVERSARY VOLUME

On January 1, 1931, THE JOURNAL-LANCET will have completed sixty years of service to the medical profession of the Northwest. Starting in 1870 it has carefully reported the progress and development of the medical profession and the individuals composing it. From the standpoint of years of service, we believe THE JOURNAL-LANCET is one of the outstanding journals in America.

We feel that this sixty years of service warrants a special volume of THE JOURNAL-LANCET which will indicate in summarized form the progress of medicine during the past sixty years, as well as viewpoints on the future outlook.

We have therefore decided to issue a special Sixtieth Anniversary volume which will be an outstanding contribution, both to the history of medicine and to modern medicine itself.

Because the event will warrant it, we have planned to send one copy to every physician and every hospital in the states of Wisconsin, Iowa, Minnesota, North Dakota, South Dakota and Montana.

We are listing below a brief outline of some of the subjects which we plan to have covered in this issue of THE JOURNAL-LANCET.

History of Minnesota State Medical Society
History of North Dakota State Medical Society
History of South Dakota State Medical Society
Development of Tuberculosis Work in Northwest
Development of Medical Education in Northwest
Development of Preventive Medicine
Noted Achievements of Men in the Northwest
Medical Journalism in the Northwest
Future of Surgery in the Northwest
Development of Surgery
History of Individual County Medical Societies
Reminiscences and Reprinted Papers

While we will be looking backwards on what has been accomplished in the past, it is our plan to have contributions from men in the Northwest as well as outstanding men throughout the country on "Medicine of the Future, What it Means and What it Will Bring."

There are several other sections and departments which we have in mind which have not been definitely decided upon. As soon as we have reached a decision an announcement will be made of these departments.

CORRESPONDENCE

COLLECTIONS AND PROHIBITION

Editor of THE JOURNAL-LANCET,

SIR:

An associate from Minnesota signing himself "Rational, M.D." quotes figures of cash received during various years and states that "the bank balance is sufficient to make me stand back of the Eighteenth Amendment until something better is instituted to lessen the consumption of alcohols."

By what right may he logically sign his letter "Rational, M.D." after arriving at such a conclusion from some figures he reproduces? One definition of rational is "having reason or understanding." From "Rational M.D.'s" conclusion we are not justified in conceding that he has either. Possibly "Rational" was merely used as a pen name.

Quoting figures of cash received from year to year may prove that the amount of his collections

improved as the years progressed, but it does not prove that the Hooveristic "noble experiment" is the cause of the increased collections. Possibly "Rational, M.D." has become more adept at the gentle art of collecting.

"You take for granted a certain false principle. You don't attempt to prove it if your victim is already poisoned by it. If he is not you suggest it by implying it. Then you show that, according to this false first principle, certain figures prove your conclusion. You leave out other figures which would destroy your conclusion, and there you are."

—Hilaire Belloc—

New Salem, N. D., Sept. 27, 1930.

R. J. STEIN, M.D.

BOOK NOTICES

TRAUMA, DISEASE, COMPENSATION. By A. J. Fraser, M.D. Pp. 254. Philadelphia: F. A. Davis Company, 1930. Price, \$6.50.

Industrialization has increased the hazards of such elemental forces of nature as trauma and disease. During the past two decades people generally have become more compensation conscious. The book is intended to furnish information for the medical practitioner and lawyer engaged in compensation procedures. After discussing in Chapter I the basis and scope of workmen's compensation, the author devotes some fifty-eight pages to the nervous system. Under the titles "Traumatic Mental Derangement" and "Hysteria," only ten pages in all are given over to the nonorganic neuropsychiatric disorders. The next nine chapters deal with other system diseases, and in Chapter XII the rating of permanent disability is discussed; rating table referring to orthopedic and eye and ear disabilities only is included. Court decisions cited throughout the book are drawn chiefly from Canadian and British sources. —JOSEPH C. MICHAEL, M.D.

MANUAL OF PHYSICAL AND CLINICAL DIAGNOSIS. By Dr. Otto Seifert, late Professor of Medicine, Wuerzburg, and Dr. Friedrich Mueller, Professor of Medicine, Second Med. Clinic, Munich. Authorized translation from the twenty-fourth German edition, by E. Cowles Andrus, M.D., Associate in Medicine, Johns Hopkins University, Associate Physician, Johns Hopkins University. Introductory preface by George E. Fahr, M.D., University of Minnesota. 503 pages, illus. Limp leather, \$6.00. J. B. Lippincott Co., Philadelphia and London.

It is difficult to see how any practitioner or student of medicine can afford to be without this English translation of the twenty-fourth edition by these masters.

In this valuable compendium, of pocket size, is available a survey of methods of physical diagnosis and of procedures in the clinical laboratory. Included are anatomical descriptions, illustrations, and colored plates, besides pertinent physiology.

Data are made readily available which can rarely be accurately memorized, and which otherwise could only be obtained by time consuming search.

—C. A. MCKINLAY, M.D.

**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Viletta Roche, Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Who's Who in Public Health in North Dakota



Colin C. Campbell, M.D., of Ashley, N. D. Dr. Campbell is Superintendent of Health for McIntosh County. He is justly proud of the response of the people of his county to the campaign last year for immunization against diphtheria. In this county-wide campaign there were approximately 3,000 inoculations; all of the graded schools were 100 per cent and many of the country schools also. Inoculations were given to children of

pre-school age and young adults as well as school children. In this county-wide campaign there were approximately 3,000 inoculations; all of the graded schools were 100 per cent and many of the country schools also. Inoculations were given to children of pre-school age and young adults as well as school children.

Dr. Campbell was born in Listowel, Ontario, March 30, 1876, the son of Lieut. Colonel and Mrs. D. D. Campbell. He was graduated from the University of Ontario in 1901 and began his practice at Hermansville, Michigan, where he remained until 1909, at which time he removed to Ashley. In 1904 he was married to Anna Belle Cunard and they have two children, Eloise and Colin, Jr. Dr. Campbell is a member of his District and State Medical Societies, the A. M. A. and Health Officers' Association.

It is interesting to note that his mother's people were among the first settlers of North Dakota, brought out from Scotland by Lord Selkirk and settled in what is now Pembina County.

HAVE YOU REGISTERED EVERY 1930 BIRTH?

Hospital Births

A study of births in North Dakota for the past six years reveals the fact that hospital births are increasing from year to year. In 1924, 1,782 births were reported, and a gradual increase brings the number up to 3,023 for 1929. We are certain more births occur in hospitals, but as long as the certificates do not so expressly state,—although they bear every evidence of having been made out in hospitals,—we are unable to tabulate them as hospital births. We therefore request that when a

birth occurs in a hospital that the certificate state the name of the institution, thereby increasing the accuracy of our statistics.

HAVE YOU REGISTERED EVERY 1930 BIRTH?

Water and Sewerage Works Conference

The second annual meeting of the North Dakota Water and Sewerage Works Conference will be held the first week in December at Grand Forks. A feature of the meeting this year will be a short school for water and sewerage works officials, to be held in conjunction with the Engineering School at the University. The purpose of this short school is to give health officers, water and sewerage works operators and city officials an intensive course in laboratory exercises, methods of proper design, supervision and operation. All health officers, water and sewerage works operators and city officials should take the opportunity to attend this school.

HAVE YOU REGISTERED EVERY 1930 BIRTH?

Diphtheria Prevention Commission

The Diphtheria Prevention Commission appointed by Governor Shafer last spring, held its second meeting September 19th, at which time it was definitely decided to launch a Diphtheria Immunization Campaign. Its aim is to immunize all the children of the state between the ages of nine months and sixteen years against diphtheria in the next two years. The Commission is enlisting the co-operation of various clubs, organizations, school authorities and physicians to aid in putting the campaign across. The Federation of Women's Clubs in annual session passed resolutions endorsing the plans of the Diphtheria Commission. It is the desire of the Commission that the diphtheria immunization movement may receive the whole-hearted co-operation and assistance of all physicians of the state.

HAVE YOU REGISTERED EVERY 1930 BIRTH?

Silo Gas Poisoning

Recently a tragic incident occurred near Hebron in which Tony Neihardt and four of his adult children lost their lives as the result of silo gas poisoning. It was first reported that these deaths were due to methane or marsh gas poisoning. This opinion was questioned by our Department and also the State Laboratory for the reason that methane is very light as compared with air and will seek a higher level. Inasmuch as all the fatalities in the Neihardt family occurred in the bottom of the pit silo, it was concluded that a heavy gas, even heavier than air, was responsible.

Experiments carried out in ensilage filled silos prove that carbon dioxide gas is developed in a

large percentage, sometimes reaching 75 per cent of the total gases present. With this accumulation of carbon dioxide, the oxygen content is reduced to almost nil. This gas, being heavier than air, remains at the bottom and when man or mammals come in contact with it, death from suffocation is the prompt result. Ten per cent of carbon dioxide in the air causes asphyxia.

The gas can easily be driven out by using an open umbrella, bunch of hay or leafy branch as a fan to promote diffusion of it. In the case of the pit silo, a safe procedure is to blow it out with the wind-blower of a grain separator or ensilage cutter before entering. When any doubt exists, the effects on a lantern flame should be noted. In the presence of carbon dioxide in any dangerous proportions, the flame will either flicker or go out, depending upon the percentage of gas present.

HAVE YOU REGISTERED EVERY 1930 BIRTH?

Occupations

Your assistance is requested in obtaining correct information as to occupation on death certificates. This is important in ascertaining the relative healthfulness of various industries throughout the United States and is required by the United States Bureau of the Census. The instructions on the back of the death certificates should be followed carefully and special note should be made of occupational influences affecting the cause of death.

The question applies to every person regardless of age. In many instances a single word is sufficient, as farmer, housewife, student, etc., but in many cases, especially in industrial employment, it is necessary to know the kind of work and also the nature of the industry. The firm name is not important, but the class or type of work is. "Laborer," "merchant," "manager," "retired," are undesirable terms if not qualified by the nature of the labor, kind of merchant, etc. If deceased has been ill a long time, give occupation at beginning of illness.

Over 1,200 queries are sent out each month from this Department to obtain information which is lacking on birth and death certificates and which is required at Washington. This is an average of 50 letters daily and occupies the entire time of one clerk. Added to this is the special query sent out on accidental deaths. About 40 of these are sent out each month. A great deal of this time and expense could be saved if the certificates were complete when sent in.

HAVE YOU REGISTERED EVERY 1930 BIRTH?

MISCELLANY

Yankton District Medical Society

The Yankton District Medical Society held its fall meeting at the State Hospital last month, the Society being the guest of Dr. G. S. Adams and his staff. There was the usual six o'clock banquet given by Dr. and Mrs. G. S. Adams in the banquet hall at the State Hospital, ladies of the physicians being represented, also several visitors. It was a very delightful course banquet.

After the banquet the doctors with the medical students of Vermillion, assembled in the amusement hall where the business of the Society was transacted and the scientific program rendered.

The committee on necrology rendered the following report in regard to Dr. Frank A. Swezey, Wakonda, deceased:

May we pause for a moment in our activities to pay a tribute of respect to the memory of one of our members who has passed on.

Dr. Frank Arthur Swezey was born at Newell, Iowa, February 19, 1871, and died at his home in Wakonda, August 11, 1930. The doctor was ill but a short period, dying quite suddenly during the night, following his usual active day, of heart disease.

Those of us who knew Dr. Swezey best, were impressed with his personality, his intensive energy, honesty and sincerity of purpose and his uncompromising opposition to all pseudo-healing cults by whatever name they may be known.

In his very active and busy life, extending over a period of thirty-five years in the one community in which he lived, he was never so happy as when going among his people, in the rain or shine of summer or the bitterest cold and snows of winter, bearing their troubles, easing their physical ills and assuaging their pains to the very best of his ability. There is no doubt that Dr. Swezey gave his very life to the people of the community in which he moved. There were not many homes in which his influence was not felt and appreciated.

We have lost a staunch friend, the state an honored citizen, and our profession an outstanding physician.

But, again, we are reminded that death is the portion of every man. The clock strikes and in striking reckons on our portion of eternity.

The loss is great but it marks a happy day in the going for the one who has lived and worked as our brother.

Be it resolved that the Yankton District Medical Society, in its regular session assembled, extend to the bereaved wife, Mrs. Swezey, and son Lewis its heartfelt sympathy and condolence in their bereavement. That this resolution be spread upon the minutes of our meeting and the secretary be instructed to forward a copy to the bereaved family.

Signed,

S. M. HOHF, M.D.

E. M. MOREHOUSE, M.D.

C. C. GROSS

The first number on the scientific program was Neuromuscular Disease of Childhood, illustrated with moving pictures, by Dr. Maurice L. Blatt of Chicago. The doctor had a fine series of moving pictures illustrating vividly many cases. Those of rabies were especially instructive as well as unusual. His talk was highly instructive.

The next, Practical Application of the Electrocardiograph with Demonstration of Apparatus, by Dr. C. Wm. Forsberg of Sioux Falls. His talk was very interesting, which together with the pictures shown indicated much thorough study of the subject.

The next, Public Health Matters by Dr. A. E. Bostrom, member of the State Board of Health, of Waubay, S. D. His talk was along the line of

public health matters and the proper filing and signing of birth and death certificates.

There were about seventy-five in attendance, including the medical student body of Vermillion.

J. A. Honf, M.D., Secretary

From the Community Fund

The red feather, symbolic of courage and triumph, will be the insignia worn by every subscriber to the 1931 Community Fund Campaign, it was announced by A. L. Searle, general chairman of the campaign which is scheduled to open November 10.

In announcing the choice of small, bright red feathers to replace the use of subscriber's buttons, Mr. Searle said:

"The Indians once wore the red feather as a badge of triumph, and it is appropriate as a symbol of a pledge for it will indicate that each subscriber has joined the community's fight against the common enemies, poverty, disease and crime. The red feather, worn in the lapel or hat-band, or pinned to a coat will flash a triumphant message, identifying each wearer as an ally of good health, good citizenship and equal opportunities."

Workers in the heart fund army will wear metallic feathers as badges. To these will be attached, as indicators of progress in the campaign, small feathers of green, orange, blue and yellow. A green feather will represent 60 per cent and a yellow feather 110 per cent.

With a complete enrollment of captains in the 37 districts of the city, wide campaign organization now at work organizing the final line up of the campaign organization army, preparations for the opening of the campaign on November 10th are well under way, A. L. Searle announced. The army of heart fund volunteers will reach 5,000 this year, the largest ever to participate. With the slogan: "We Will Meet the Greater Need," this great organization of Minneapolis men and women who gladly give their time to the task of seeking pledges, will seek to reach a higher goal than ever before, necessitated by heavy demands, which have been placed on such relief agencies as the Family Welfare Association, care of neglected and dependent children, care of homeless unemployed men, and others during the past year.

Minnesota Public Health Association

In response to requests from physicians all over the state, a one day short course in tuberculosis will be held, November 6, at the state sanatorium at Ah-Gwah-Ching, Minn. The Minnesota Public Health Association is sponsoring the short course and Dr. H. A. Burns, Superintendent of the State Sanatorium, is in charge of the program.

For the morning's program Dr. W. H. Ude, Minneapolis, will read a paper on some phase of roentgenology in relation to tuberculosis and Dr. E. K. Geer, St. Paul, a paper on "Collapse Therapy." There will be brief talks by Dr. B. Borreson on "Surgical Tuberculosis" and Dr. R. R. Hendrickson on "The Incidence of Tuberculosis in Cass County."

It is planned to have each visiting physician study the history and make an examination of one patient during the afternoon and then meet together to discuss their findings. Any individual problems on tuberculosis will be taken up at this time.

This is the third short course to be held at the State Sanatorium, and it forms a part of the state-wide Christmas Seal work. The registration is limited and those desiring to attend are asked to communicate with the Minnesota Public Health Association, 11 West Summit Avenue, St. Paul.

NEWS ITEMS

Dr. and Mrs. Henry W. Cook, Minneapolis, recently returned from a month's trip to Europe.

Dr. J. A. Regner, who has been in active practice at Palisade, is now located at Markville, Minn.

Dr. J. C. G. Charest, formerly in practice at Worthington, Minn., has moved to Sioux Falls, S. D.

Dr. L. H. Privet, Wessington, has moved to Geddes, S. D., where he will continue in general practice.

Dr. L. W. Nabers, Rochester, has moved to Minneapolis, and is now affiliated with the Nicollet Clinic.

Grand Forks, N. D., has issued \$225,000 in bonds for the improvement of the water system of that city.

Twelve North Dakota hospitals have now been named as being inspected and approved by the American College of Surgeons.

Dr. L. K. Onsgard, Houston, Minn., has opened a branch office at Hokah, and will be at that office on Monday and Friday of each week.

Dr. W. W. Yaeger, Ivanhoe, Minn., was recently elected president of the Lincoln-Lyon Medical Society at the annual meeting held in Marshall.

Dr. Floyd Feldness, Pipestone, Minn., has been added to the staff of the State Board of Health. Dr. Feldness is a graduate of the University of Minnesota Medical School.

The Wright County Medical Society held its annual meeting at Buffalo, Minn., last month. Dr. J. J. Catlin, Buffalo, was named president and Dr. C. L. Roholt, Waverly, secretary.

Dr. J. H. Kirkham, who has been in active practice for many years at Langdon, N. D., has moved to Des Moines, Iowa, to become chief surgeon of the Army Hospital in that city.

Dr. J. M. Culligan, St. Paul, a graduate of the University of Minnesota, was made a member of the American College of Surgeons at a recent meeting of the college at Philadelphia.

A new \$350,000 Medical Arts Building has been erected by the medical men of Great Falls,

Mont. It is a beautiful structure and was built especially for the needs of the medical profession.

Dr. John L. Everlof, who has been spending the last year in New York and other eastern cities, has resumed his practice of urology at his offices in the Medical Arts Bldg., Minneapolis.

According to the *Journal of the American Medical Association*, there are now 6,665 registered hospitals in the United States. These hospitals have a capacity of 907,133 beds, an increase of 14,199 beds over 1928.

A consolidation has been effected by the Physicians Hospital and the Swedenburg Hospital, at Thief River Falls, Minn. The Physicians Hospital Building will be used for the care of the sick and the other as a nurses' home.

Dr. Martin J. Fardy, Minot, N. D., was in Philadelphia last month, where he was made a Fellow in the American College of Surgeons. Three other doctors are members, Drs. A. D. McCannel, A. L. Cameron and A. R. Sorenson.

The annual meeting of the North Dakota Nurses Association recently held at Fargo, elected the following officers for the coming year: Miss Esther Teichmann, Bismarck, president; Miss Ella Voge, Bismarck, secretary-treasurer.

Nearly one hundred doctors and druggists with their wives attended the annual meeting of the Park Region (Minn.) Medical Association at Alexandria, Minn., last month. Dr. F. J. Wulling, University of Minnesota, delivered the principal address.

The annual meeting of the West Central (Minn.) Medical Society was recently held at Morris, Minn., and the following officers were elected: Dr. E. A. Eberlin, Glenwood, president; Dr. E. T. Fitzgerald, Morris, vice-president; and Dr. A. L. Lindberg, secretary-treasurer.

Dr. E. A. Meyerding, St. Paul, executive of the Minnesota Public Health Association, was a speaker at a luncheon held in connection with the institute in Pine City on October 10. Dr. Meyerding discussed the Christmas Seal educational work in the public schools of Minnesota.

The Tri-County (Minn.) Medical Association held its annual meeting at the Mineral Springs Sanitarium last month, with about sixty members present. After the dinner some very interesting talks were given by Drs. W. F. Lemon

and H. L. Helmholtz, Rochester, and Drs. A. S. Anderson and C. B. Drake, St. Paul.

The twenty-fifth annual meeting of the Minnesota State Registered Nurses Association, held at St. Paul last month, was one of the most successful ever held. The attendance was large and each day a very interesting program had been arranged. Miss Olivia T. Peterson, Minneapolis, was elected president and Mrs. W. F. Rhinow, Minneapolis, secretary.

Dr. F. J. Lepak, Duluth, was elected president of the St. Louis County Medical Society at the annual meeting, recently held in that city. Other officers named were: Dr. T. A. Estrom, Hibbing, first vice-president; Dr. M. A. Nicholson, second vice-president; Dr. M. McC. Fischer, secretary-treasurer; Dr. J. M. Robinson (chairman); Dr. E. L. Tuohy and Dr. B. F. Davis, board censors.

Dr. A. E. Johnson, 61, a practicing physician in Minneapolis for 13 years, died on board the S. S. Europa while on the way to the United States from Sweden. Dr. Johnson left Minneapolis in May for a visit to his old home in Sweden and expected to make a general tour of Europe. He suffered a heart attack in Lund, Sweden, June 23, and was confined to a hospital in that city.

Dr. J. C. Ohlmacher, Head of the Department of Bacteriology and Pathology, School of Medicine, University of South Dakota, was the guest of honor at the annual staff meeting of the Sacred Heart Hospital, LeMars, Ia., recently. After the annual banquet and election of officers, Dr. Ohlmacher addressed the physicians of the Hospital staff on the subject, "Some Fundamental Principles of Kidney Activity in Health and Disease."

Dr. James I. Scarborough of Little Rock, Ark., was elected president of the Association of Resident and Former Resident Physicians of the Mayo Clinic and Mayo Foundation at the twelfth annual meeting held at Rochester last month. Other officers named are Dr. Egerton L. Crispin of Los Angeles and Dr. John Blackford of Seattle, vice presidents; Dr. Thomas J. Kinsella of Oak Terrace, secretary, and Dr. Porter P. Vinson of Rochester, re-elected associate secretary and treasurer.

Dr. Walter J. Marcle, Minneapolis, head of the tuberculosis department at the Veterans' Hospital at Fort Snelling, and former president of the Hennepin County Tuberculosis Society, was elected president of the Mississippi Valley

Conference on Tuberculosis at a meeting held last month at Rockford, Ill. Dr. E. L. Meyerding, St. Paul, executive secretary of the Minnesota Public Health Association, was named secretary-treasurer of the conference. The 1931 meeting will be held at St. Paul.

Dr. F. W. Minty of Rapid City, S. D., is using the airplane in the practice of his profession to save human lives. He is confident that within the last year by its use he has been able to save at least a dozen lives that might otherwise have been lost. Three years ago he was called to treat two cases of a serious nature. One was seven and the other nine hours distant from Rapid City or the nearest medical aid. He chartered an airplane. His experience was so satisfactory he bought one. Now he owns three. One is equipped as an ambulance. If necessary a nurse can be carried.

How an extensive recreation program, including dances, parties, music and moving picture shows, benefits patients at the North Dakota State Hospital for the Insane at Jamestown is related in the 23rd biennial report of the institution just filed with the State Board of Administration by Dr. J. D. Carr, Jamestown, superintendent. The report shows there were 1,507 patients in the hospital on June 30, 1930, the daily average of patients for the biennial period being 1,487. One of the important features of the therapeutic resources of the hospital is the maintenance of a suitable social environment, according to the report. "Properly conducted social and recreational contacts that afford opportunities in events," the report continues, "is quite essential to any treatment that is to be conducive in bringing about an adequate and hopeful social adjustment. An extensive schedule of amusements and entertainment has been carried out in the hospital auditorium. The weekly moving picture has been supplemented by an afternoon performance for the entertainment of that class of patients who could not be safely handled at an evening performance. Even the criminal psychotics have been permitted to attend the afternoon performance. The evening performance has as usual been attended by the more orderly and trustworthy patients."

CLASSIFIED ADVERTISEMENTS

Technician at Liberty

X-ray technician, with two years clinic experience, wishes position in hospital, clinic or doctor's office. Good references. Address 756, care of this office.

Graduate Nurse at Liberty

Graduate nurse wishes position as doctors office assistant. Call South 6579.

Position Wanted

Position wanted by expert x-ray technician. Good references. Address 764, care of this office.

For Sale

Instrument cabinet and operating table for sale very reasonable. Address 761, care of this office.

Practice for Sale

Practice and medical library of the late Dr. T. B. Smiley, of Mt. Vernon, S. D. Address Mrs. T. B. Smiley, Mt. Vernon, S. D.

Locum Tenens Wanted

To take over lucrative unopposed general practice in Eastern South Dakota, for several months. Privilege of buying later. Address 769, care of this office.

For Sale

Exercising machines and Ultraviolet Ray Lamps. Brand new, have never been used. Will sell for half of list price. Description and prices on request. Address 713, care of this office.

Wanted

A well trained specialist, internal medicine, interested in joining a well established clinical group in Twin Cities. Scandinavian preferred, although not essential. Address 763, care of this office.

For Sale

Office and equipment, located at Lake Street and Hennepin, Minneapolis. Four room office suite, well equipped. Reason for selling, leaving city. Good price for cash deal. Dr. John C. Kock, telephone Kenwood 3958.

Practice for Sale

\$15,000 cash practice for sale. City of 5,000 located in Western Minnesota. This practice can be purchased by buying part or all office equipment. No real estate. Reason for selling, locating on West Coast. For further information address 770, care of this office.

Opening for General Practitioner

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BLOOD TRANSFUSION IN PEDIATRICS WITH SPECIAL REFERENCE TO THE INTRAPERITONEAL ROUTE*

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The original work of Jansky¹ in 1907, Moss² in 1910, and Lewisohn³ in 1917, placed the introduction of blood from man to man upon a rational and comparatively safe basis. This increased knowledge of the physiology and chemistry of blood gave the needed impetus for the more general clinical application of transfusion as a therapeutic procedure. Adherents of the direct and indirect blood transfusions have both reported striking results. With increased knowledge, indications for this new form of therapy have become more numerous.

However, this valuable procedure has been limited largely to adults. As recently as 1921, Robertson, Brown, and Simpson⁴ were able to find only two reports of blood transfusion in childhood in the entire literature. The introduction of a needle into the vein of an adult may be a relatively simple procedure, but it is an entirely different matter in an infant or child. Trans-

fusion is especially valuable at this age. Even today many cases do not receive blood because of the great technical difficulties involved.

As a result of personal experience with some of these difficulties, we attempted to devise a simpler method of passing blood from one child to another. In 1923⁵, we published the results of extensive laboratory experiments showing that blood was absorbed from the peritoneal cavity. We found that rabbits could absorb, in four hours time, one-fifth of their own blood volume. We proved that these cells introduced into the abdominal cavity pass through intact into the general circulation. The normally nucleated red blood cells of pigeons were injected into the abdominal cavity of rabbits and were picked up in the systemic system within fifteen minutes. Further experiments led us to believe that cells introduced in this manner functioned as well as those introduced directly into the veins.

*Read before the Section on Pediatrics of the American College of Physicians.

Encouraged by this experimental work, we attempted its clinical application. Detailed results have been published in other papers.^{6, 7, 8.} They were very satisfactory and warranted further observation. However, like any other procedure, the intraperitoneal transfusion of citrated blood has its indications and limitations. During the past six years, these indications have become more clearly defined. A review of the clinical experiences of other men is of great interest.

Ruh and McClelland⁹ have used both citrated and whole blood injections into the abdominal cavity with good results.

In 1924, Meyer¹⁰ recommended its use in all patients requiring blood transfusion in whom an intravenous transfusion was difficult or impossible. His results in 25 cases showed no essential difference between the intraperitoneal and intravenous transfusion of citrated blood.

Opitz and Metis¹¹ showed in experiments on dogs and rabbits that foreign blood was taken up into the circulation as quickly as own blood. In thirteen infants, they were able to demonstrate that the blood introduced intraperitoneally can reappear in full count in the blood stream. Resorption may begin in a few hours and be completed in sixteen hours, although this generally required three or four days. They believe that intraperitoneal blood transfusion is a practical substitute for intravenous transfusion, and that it causes fewer secondary reactions.

Conrad¹², in 1925, reported good results in two cases of severe secondary anemia. The laboratory report is especially interesting: "After the first transfusion there were two types of cells: the one, those of the recipient, were exactly the type seen before the transfusion, while the others, those of the donor, were large well-stained cells." We have been able, many times, to demonstrate this same picture in blood smears taken from our patients.

In 1926, McKhann¹³ pointed out that in the acute intestinal intoxications of infancy, the results were not satisfactory because of the uncertainty of absorption.

During the past year, Grulee¹⁴ reported its use in twelve cases of Von Yaksch's anemia. He concluded that the immediate results were good in almost all cases. He found that the general condition of the patient improved even more strikingly than the blood picture. He noted a distinct improvement in the red blood cells, hemoglobin, and white cells of the patient.

Hill, Smith, and Cross¹⁵ reported its use in conjunction with intraperitoneal saline solution. They came to the conclusion that this procedure was a valuable therapeutic adjunct in certain cases.

In 1927, Grulee¹⁶ published his further experiences and came to the following conclusion: "We have in intraperitoneal transfusions of blood a therapeutic measure of great value in many severe conditions which we encounter in pediatric practice. In some instances, the more laborious and difficult route of blood transfusion, the intravenous, may be used, but in many cases the only one available is intraperitoneal."

Floyd,¹⁷ in 1929, cautioned against its use in very sick infants and cites two cases of his own in which absorption of the blood did not take place. Both were cases of septicemia. He rightly concluded that certain sick infants have an impaired capacity to absorb blood from the abdominal cavity.

The most extensive series of cases thus far reported was published by Cole and Montgomery.¹⁸ They gave 237 intraperitoneal transfusions to 117 private patients. They got reactions, such as restlessness and abdominal distention, in less than seven per cent of their cases. They found the method of great value in secondary anemia and in the combating of infections.

The combined experience of many observers shows that with few exceptions the intraperitoneal transfusion of citrated blood is a safe and effective therapeutic measure. It is unlikely to be of value in the treatment of collapse or hemorrhage where an immediate increase of blood is desired. In more chronic forms of anemia, it has been found very beneficial. Intraperitoneal injections are especially indicated in cases of anhydremia, athrepsia and malnutrition due to some parenteral infection. They are contraindicated in children who are acutely ill or moribund. Absorption of the cells will not take place and there will be no clinical benefit to the patient.

I cannot emphasize too strongly that this procedure is to be regarded as a true transfusion. All precautions relative to compatibility and grouping should always be taken. Blood grouping should never be relied upon as a sole method in selecting donors. Cross matching is the only safe and reliable method available.

The use of so-called universal group blood is not desirable. The literature is full of case re-

ports of severe reactions and even death from the indiscriminate use of such donors. The incompatible plasma of the donor may agglutinate the cells of the recipient with fatal results. Even hemolysis of the recipient's cells by the donor's serum has been known to cause death.

It is well known that in addition to the four major blood groups, subgroups may occur. Under certain conditions, abnormal blood groups may appear. In the usual laboratory procedure, the compatibility of the donor's and recipient's blood is based entirely upon the action of the erythrocytes. Doan¹⁹ has recently shown that there is a definite incompatibility between the blood plasma of certain individuals and the white blood cells of others. This may account for some of the more violent reactions which occasionally follow a blood transfusion.

It is also important to remember that cross grouping should be done before each transfusion. Careful study has shown that after repeated transfusions from the same donor, agglutinins and hemolysins for the donor's red blood cells are formed. There is a "variation in the agglutinating ability from serums of different persons of the same group, as well as a variation in the ability of corpuscles of the same group to be agglutinated by the same serum."²⁰ It has frequently been observed that a donor's blood may give excellent clinical results for one or two transfusions and then be followed at a subsequent injection by a more or less severe reaction. Such a reaction could be avoided by cross grouping before each transfusion and a more suitable donor obtained. These facts should be borne in mind and applied whether we give blood intravenously or intraperitoneally.

MODE AND RATE OF ABSORPTION

Absorption from the peritoneal cavity depends apparently to a large extent upon mechanical factors.²¹ Differences of pressure between the abdominal and thoracic cavities are important. The degree of peristalsis of the abdominal viscera plays a part in the rate of absorption. The general condition of the patient, and especially the state of his circulation, are vital factors to be considered. The blood is absorbed by the diaphragmatic lymphatics and enters the circulation through the thoracic duct. This passage of cells has been demonstrated experimentally and histologically by many investigators.^{21, 22.}

SUMMARY

Finally, it must be remembered that a blood transfusion has many effects and serves many purposes. It acts, not merely as an excitant of the bone marrow, but takes the place of the recipient's deficient red blood cells. It furnishes the body with additional blood building elements for new red cells. It brings a low blood volume back to normal. It increases the blood pressure and stimulates a more normal blood flow. The antibody content and nutritional value increases the patient's resistance to infection and gives him new vitality.

The results are not transitory phenomena. Through the ingenious method devised by Ashby,²³ we have been able to show that the donor's erythrocytes function in the recipient's general circulation for many days after either an intraperitoneal or intravenous transfusion. These results have recently been confirmed by others.²⁴

In infants and children, because of the relatively small blood volume, unusual clinical results may be obtained with relatively small amounts of blood. However, the technical difficulties involved in giving blood into the vein of a tiny dehydrated baby are very great. The method which will combine the greatest simplicity with uniformly good results is the method of choice. It appears to us, as a result of our own clinical experience and the experience of others, that the intraperitoneal route is such a method. Such transfusion has been done, without any assistance, at a patient's bed-side. Whenever a slow transfusion is indicated and venipuncture is practically impossible the abdominal route is the method of choice.

We may, therefore, draw the following conclusions:

1. Cross matching of the donor's and recipient's blood should be done before every transfusion.
2. An intraperitoneal injection of blood should be regarded as a true transfusion.
3. Intraperitoneal transfusion is contraindicated in diseases involving the abdominal cavity and its viscera and in conditions in which the patient is moribund.
4. It is indicated whenever a slow transfusion is desired and the intravenous route is not available. This is true in cases of malnutrition and severe secondary anemias in small infants.

5. Intraperitoneal transfusion of citrated blood is a simple, safe, and effective therapeutic procedure.

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THE DANGER OF SUGGESTION IN SICKNESS

By OSMAN F. WAY, M.D.

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By suggestion we mean any impression which is consciously or unconsciously received through any one of the senses.

Therefore our whole education is created by suggestion, and the effect of every suggestion is influenced by those suggestions which have preceded it.

We thus see the importance of right suggestions, especially to the young, whose whole life is to be influenced by the early impressions received from our words and actions.

Not only are the young especially susceptible to suggestion, but also those suffering from sickness are generally very ready to accept suggestions, especially such as will lead them to imagine their afflictions to be of a serious nature.

"As a man thinketh in his heart, so is he," applies just as surely to his physical condition as it does to his moral nature. If a man believes himself to be sick he will by his own thought produce in himself physical changes corresponding to the nature of the disease he believes himself to be suffering from. This is a well recognized fact.

"Thoughts are things." Change the thoughts and the system changes. Thoughts, through the medium of the brain, affect the organs of nutrition. And the cause of nearly every ailment can be traced to troubles of nutrition. These troubles nearly always commence as functional disorders which, if not corrected, lead to organic changes in the affected organs.

The brain is the dominant organ of the body. Every muscle, nerve and organ is directly influenced by the work of the mind.

While all people are susceptible to suggestion, some are much more so than others. And it is an accepted fact that those people who are continually complaining that they are sick are very susceptible to suggestion.

They are usually fond of telling about their ailments. And every time they tell about them they, themselves, are all the more convinced that the ailments are realities. Soon they become confirmed invalids, going from one doctor to another in a vain attempt to regain health. If they are fortunate enough to consult a physician who understands the case and is able, by

his words and actions, or by his reputation, to convince them that he can cure them, they will surely receive benefit and perhaps a cure of the trouble. But in the majority of cases it is but a short time until the same trouble returns or a new one sets in and the patient is as bad as before.

As a rule women are more susceptible to suggestion than men are, therefore more likely to be afflicted with this class of troubles.

The success of the patent medicine business is almost wholly due to the suggestibility of the human mind. Their advertising is written with the pure intent of causing people to think they are sick, and after that is accomplished it is but a short step more to induce them to buy the dope. By this means millions of dollars are spent every year for the worthless stuff.

A wholesale drug salesman lately told me that sixty-five per cent of their entire sales were for patent medicines.

Why people are so much more easily led to believe they are sick than that they are well I do not know, but such is the fact. It is undisputed that people may be made sick by different ones telling them that they are not looking well, and following this with other appropriate suggestions. Most people like to tell of their ailments and to be sympathized with. And likewise the general public seems to delight, not only in telling the patient how badly he looks, the danger of such conditions, other people they have known with the same trouble who never got any better and all such nonsense, but they will also tell the neighbors and friends all about it, and then not content, will advise a change of doctors or a treatment entirely contrary to that the attending physician is trying to carry out. The majority of people are inclined to be pessimistic and this is the case in sickness more than at any other time.

The sick people and their friends are not the only ones who are using these pessimistic suggestions however. The same is true of many physicians. It is a common thing for a doctor to say when called to a patient, "You ought to have called me sooner," "You have a very sick child but I will do what I can for it," "Go to bed and stay there," "Be very careful what you do or what you eat," and many other such suggestions, intending to impress upon the patient and his friends that he is in a critical condition, needing much care to prevent some dire results. How often do we hear patients returned from a hospital say, "The doctor said I got there just

in time. If I had been a little later they could have done nothing for me." Or, "The doctor told me I must not do any work for at least six months," or a year, as the case may be, whereas the doctor knows the operation might have been delayed days or weeks without serious trouble, and he should know that to enforce idleness for six months or a year on anyone is sufficient to make him an invalid for the rest of his life.

Some time ago a lady who had had an operation a couple of years before was telling me how well she had been ever since, and then she remarked that it was a wonder, for circumstances were such when she returned home that she had to go to work and could not take the rest the doctor told her to. I said, "My good woman, going to work was the luckiest thing that ever happened to you, as you did not have a chance to lie around, be waited on and think you were an invalid." And, gentlemen, I believe this is true. Send your patients home and tell them to forget they have had an operation or even have been sick, to go to work and quit telling everyone about their time at the hospital. This may not advertise your business quite so much but it will leave fewer invalids to wander about from doctor to doctor rehearsing their ills, baffling the skill of honorable physicians and filling the purses of the quacks who are ever ready to fleece this class of patients.

Is it not a fact that most of us are too prone to give the patient the idea that his trouble is more serious than it really is? And don't we by this means start many on the road to invalidism whom we might save by a few well directed suggestions? Do we not often not only prescribe for patients but also pay them many visits for some trouble for which we would never give anything if it were one of our own family?

A few days ago in a company of several physicians, one of the number was telling of a case he had which neither he nor any of several physicians who had seen it were able to benefit. The trouble was in the abdomen and after the symptoms were described some in our number said the patient should have an operation, in fact this seemed to be the general opinion. "Yes, that is all right," said the one who had the case, "but that patient is my wife and I don't want her operated on unless it is necessary." "Yes," agreed a number, "that is quite different." And I believe if our patients were all members of our own families we would be much more careful not only of the use of the knife but also of our

medicines and of our advice.

So strongly do I believe in the power of suggestion and the influence it has on the body, that I am convinced that many of our chronic conditions especially are the result of suggestion and the worry it produces. Continual autosuggestion is capable of producing not only the nervous conditions we meet but actual structural changes in the organs or parts to which they are so continually directed.

How else shall we account for such diseases as goiter, for instance, now invading our hospitals? Before operations on this condition became popular comparatively few were afflicted with the trouble and those who did have it seldom felt any effects from it, but now, as soon as there is the least sign of an enlargement, the patient begins to choke, is smothered and has all the disagreeable symptoms said to accompany this disease. I firmly believe many of these cases have their origin in the choking of hysteria. As soon as this choking is felt the patient thinks she has a goiter, and her continually thinking of it soon produces an enlargement and she really has the disease.

About a year ago a woman came to me suffering much from goiter. Upon asking her history she told me she had recently undergone an operation for some pelvic trouble and that when leaving the hospital one of the doctors remarked that she had a small goiter and if it ever troubled her she had better come back and have it out. She had known of the enlargement the past couple of years but had never experienced any ill effects from it, but within two weeks of the conversation with the doctor she was choking, oppressed for breath, and was about to return to the hospital and have it out when some of her friends persuaded her to see me. She did not return to the hospital but at the end of ten days was well and returned to her home in Montana where she still remains well.

Mrs. D came to me complaining of a sore tongue. Upon examination I could find nothing wrong though she insisted that a small red spot I could scarcely see was causing her much pain. To satisfy her I applied some astringent and assured her it would soon be all right, but she returned in a few days saying it was no better and asked if I were sure it was not a cancer. I told her I was. She then said she would not have thought of that had it not been that a certain doctor who had seen it told her not to worry for fear it was a cancer. "And," she said, "the way he said it caused me to think it

was cancer, and I can't get over it."

I assured her that it was nothing that would ever do her any harm and she went home. The next morning her husband called me to the phone and asked what he could do for his wife, saying she was about crazy with the pain of her tongue. I told him to take her to the hospital at once, saying I was sure there was nothing the trouble and if they would tell her so perhaps she would believe it.

They went, were told there was no trouble. She came home satisfied and has had no further pain or trouble.

While writing the above a man came to me complaining of the side of his tongue with which upon examination I could find no trouble. He then told me that a couple of years ago he had had some little trouble with his tongue. He consulted a doctor who wanted him to stay and be treated for it. After a few days he returned home contrary to the doctor's advice, who told him he hoped there would be no bad results from his leaving. He soon consulted a specialist who persuaded him to stay and have the tongue treated as it was cancer. He stayed until suddenly the specialist died. As the tongue was no better he consulted another specialist who told him there was nothing the trouble. But the suggestion had been planted, fear had been aroused, and now, although there is nothing wrong and he has since been told by several good physicians that there is nothing wrong with him he still has a fear and is often thinking that something is wrong. He cannot get rid of that fear though he says he is sure the doctors are telling him the truth.

Several years ago Miss E. S. was low in bed dying with consumption, her physician said, and preparations were being made for the end as the doctor had told her friends she could live but a few weeks. When I saw her she said she wanted to see me though she knew I could do her no good as she had seen her grandmother, her father and sister all die with consumption and she realized she was about to go the same way.

After examining her I told her I thought she and her friends, as well as the doctor, were mistaken, that I didn't think it was time for her to die yet. I also told her I know her well enough to believe that what the doctor and her friends believed she would do was just the thing she would not do, as that had been her nature all her life. I also told her that because others of her family had died of consumption was no

reason why she would. With this and other words of encouragement I left. She continued taking the same medicine she had before I came, but began to improve at once. She was soon up and around, has since married and is alive today at least twenty years after the above happened.

Miss E. B. had been sick for several weeks with what her physician said was rheumatic fever, which finally resulted in heart complications from which the doctor said there was no help and that he could do no more, she could live but a short time. Her relatives were sent for and gathered around her bed to see her die.

I found her lying very still in bed unable to be moved without fainting, pulse irregular and weak and with other symptoms to be expected in one who was dying. But there was no rheumatism and no heart complications except those produced by a genuine case of hysteria. I verily believe that woman would have died within a short time had not someone seen her who understood her case, and I also am sure her condition was brought on wholly by the suggestions of her friends, herself and the doctor.

Thus I might relate many cases, but it is needless. They are occurring every day and we all are having them to deal with. Patients come to you every day whom you know have little ailing them except the imagination. If you are honest and explain the condition to them they are soon well with little or no treatment, but if you feed their fears with suggestions of like nature you will have a case on your hands which will continue for a long time and may be very serious.

With all due respect to our honored veterans of the late war of the Rebellion, I must say that the pensions have produced many more invalids

than the war did. The fact that one must have some disease in order to draw a pension has caused many a man to think over his ills until he was sick indeed.

None of us always feel well, and when we have some ill feeling, if we allow ourselves to think of it and fear it is bad, and especially if this fear is strengthened by our friends and doctors, the ill feeling will soon become a real disease. Without doubt many of the surgical cases now so prevalent are caused by suggestion. Otherwise how can we account for such diseases as goiter, for instance. A few years ago we saw only a few afflicted with this disease, and those who did have it were seldom caused any trouble on account of it. But now it is one of the most popular diseases, and everyone with the least sign of an enlargement experiences all the unpleasant symptoms said to accompany the disease.

It is the nervous element of nearly every disease that causes the suffering and the call for the doctor. These nervous conditions are nearly always the result of suggestions, which may come from some other person or by the working of the patient's own mind. Thousands of people are wearing glasses with much benefit to them, simply because others are wearing them, and they have been told that they need them. Every year crowds of people attend fairs and other sources of entertainment simply because others attend. They would never think of attending the same entertainment were it not for the crowd.

Thus we see how the lives and health of all are influenced by the words and acts of others. And it should teach us to be very careful of our suggestions, especially when dealing with the sick, who are very susceptible to such influences.

THE FUNDAMENTAL TREATMENT OF FRACTURES*

BY ARCH A EDWARD WILCOX, M.D.

MINNEAPOLIS, MINNESOTA

This is an age of acceleration. Mass production, high speed machinery, automotive and aerial activity, the increased pace of human endeavors and physical movements provide the background and basis for the increasing fre-

quency of physical injury, especially fractures.

Until recently, except from a few keen and enthusiastic observers, fracture cases have not received the study, thought, and management which they deserve and should command. It is not long ago that in many well equipped and

*Read at a meeting of the North Dakota State Medical Association, at Bismarck, N. D., May 26, 27, 28, 1930.

otherwise deserving surgical institutions, the management and treatment of fractures has been left to the internes or junior house officers. Records and results of treatment under such conditions are unconvincing and leave much to be desired.

The advent of x-ray, industrial insurance, compensation laws, and the valuation placed upon the final result of disability and loss of function have sharpened the pencils of economists and the wits and ingenuity of the medical and surgical attendants. The result is that in the last decade we have made much satisfactory progress in the treatment of fractures.

This progress, in a large measure, has resulted from just such general discussions in medical societies as is taking place here today. Such discussions bring out the importance of proper training of medical students to regard a broken bone as something more than a local mishap; urges the laity to realize the severity and importance of the subject, as regards the influence the result may have upon the economic status of the injured individual; further, it emphasizes to the medical and surgical profession the wisdom of considering the question of fractures in the light of a major problem; and lastly, confronts the hospital management with a responsibility for providing suitable quarters, x-ray, and practical apparatus for continuing treatment, as well as organizing the staff in such a manner that it may, either by concentration or by rotating service, give better and more thorough study to the treatment of fractures.

Educational accentuation is manifest, not only in special courses during the period of medical training, but is particularly prominent in certain hospital services, the tendency being to collect and segregate fracture cases for concerted action in study and treatment.

The influence of the fracture committee of the American College of Surgeons is somewhat responsible for this move, and with its Regional Committees which have been appointed, further benefits will ensue.

The speaker has been appointed Chairman of the Regional Committee in the vicinity of the Twin Cities and takes this opportunity to solicit your aid and coöperation in carrying out the wishes and recommendations of the National Committee, as the work gets under way.

No restraint should be fostered, relative to propaganda which will bring to the laity, in proper form, information which will encourage

coöperation in the treatment of fractures. There are many times when such coöperation is sorely needed, yet woefully lacking. I refer to fracture cases which are complicated, requiring frequent readjustment, periodical changes in the course and method of treatment, and under the circumstances where a shift from conservative to more radical treatment is indicated.

Hospital services can only be efficient when authorities as well as the staff place proper valuation upon the importance of fracture cases. An ideal situation may be said to exist when some one or group of the staff is particularly interested in the treatment of fractures and invested with the authority to pursue this function. The ideal hospital equipment will consist of accessible quarters for receiving injury cases, room for first aid treatment, immediate x-ray examination, and convenient housing of treatment equipment. The assisting staff, internes, and nurses should be definitely instructed in the methods to be employed, reasons for the same, and the object to be accomplished.

Periodical checking of progress, consisting of subsequent x-ray examination, recording graphically the position of the fragments, and a summing up of the entire case and its final result on a proper chart, as suggested by the American College Committee, is of utmost importance, not only as regards the case itself, but for future information and protection of the hospital as well as the attending staff. While results will naturally be better under such ideal conditions, it unfortunately happens that only a small proportion of fracture cases are treated under these circumstances.

The far greater number of skeletal injuries necessarily are treated by the general practitioner, in his office, in the country, and in the home, yet as so aptly stated by Wilson and Cochrane, "notwithstanding the lack of suitable facilities, the same standards of treatment and the same quality of results, as obtained in the best hospitals, are demanded by both the public and the courts." Such results can be obtained only by the use of the most efficient procedures. The best tools must be placed within the reach of every physician and he must be instructed in their use.

Special fractures command individual consideration, but there are some fundamental facts pertaining to most all fractures.

Every fracture exhibits, general, as well as local, symptoms. The patient as well as the frac-

ture should be considered. The susceptibilities of age, the degree of shock, the inroads of alcoholism, and complicating injuries to other organs merit careful analysis in selecting the type of local treatment.

The local treatment must not only be directed to the bone, but to the accompanying injury of the surrounding soft structures, as muscles, nerves, blood vessels, neighboring joints, and skin.

To restore function of the injured should be the aim of all treatment, and to accomplish this, the first principle is the placing of the fragments in as nearly a normal relation as possible. This is of the utmost importance.

The second principle is the fixation of the fragments with suitable apparatus to prevent secondary or recurrent displacement, and to hold them in position until callus formation has taken place.

The third principle is the institution of active movement of the muscles and joints as soon as compatible with the first two principles.

The placing of fragments in a satisfactory relation may be easy or extremely difficult.

Nearly every case demands an anesthetic. General anesthesia under most circumstances is preferable, but with experience and practice, local anesthesia, mid proper surroundings, will become more popular.

The details of anatomical relations must be carefully considered to successfully combat deformity.

Traction and counter traction combined with anatomical knowledge will in most instances accomplish reduction of fragments. One used without the other frequently spells failure.

Fixation of fragments is accomplished in several ways, by closed or operative measures, by internal or external splints. The external splints may be of plaster, metal, or wood, and many other materials have been used. All may have their peculiar advantages. However, the principle remains the same. The fragments must be held in a fixed position, the material used depends upon the workman, his skill in applying same, and his individual preferences.

The early muscle activity and movement of neighboring joints tends to prevent atrophy, organization of exudates, formation of adhesions, and development of local fibrosis, thus helping to restore function earlier, as well as warding off permanent changes in the surrounding tissues and permanent disabilities.

The excellent and creditable works of Scudder, Cotton, Wilson and Cochrane, Speed, and others have accentuated the importance of these principles, and recently the work of Boehler, of Vienna, emphasizes these fundamentals. His work is founded on his own experience and his views, many of which are original and some quite apart from the usual teaching, are most convincing. His book has many original illustrations, some of which I will show today.

At this time only mention of the above fundamentals of the treatment of fractures can be considered. A discussion of the details of any one division would more than take up our allotted time. However, before showing some slides of cases illustrating these fundamentals and apparatus used, I wish to list the following conclusions:

1. Fractures are surgical problems of importance.
2. The public and courts demand efficient treatment.
3. We should demand coöperation of laity and patients.
4. We must become familiar with the proper tools and use them intelligently.
5. We must aim at restoration of function.
6. We must attempt to obtain good reduction, then maintain it until callus is formed.
7. We must not, while treating the bone injury, forget the surrounding soft tissues or the patient who owns the fracture.

DISCUSSION

DR. EMIL GEIST (Minneapolis, Minn.): I think Dr. Wilcox is to be complimented on his excellent presentation, and still more on his honesty. It is seldom that one sees mistakes as one saw it in that shoulder case he showed us. He let us learn with him by his mistake, which I think was a fine thing to do. Dr. Wilcox we consider in Minneapolis our leading fracture man. In the treatment of fractures it is necessary to know the anatomy of the bones, and actually know where the depressed areas, the tuberosities, the contractors and the various structures are located. We have to know the geography of the bones. We have to know the bulk of the bones, we have to know the epiphyseal lines and how long they have existed. We have to have this actual knowledge, and we have to know the anatomy of the muscles which are attached to the bones. We have to know that when they pull on normal bone and fractured bone ends they act very differently. We have to know the geography of the muscular system so far as attachments are concerned.

The second thing is that we have to have a fair knowledge of physics, of the pulls and stress and strain of these muscles, and how our curative meas-

ures will act. We have to know about the physiology of the muscle.

The third requirement, and perhaps the most important, is that we must have a way of reasoning sensibly. Dr. Wilcox referred considerably to the work of Dr. Boehler, of Vienna. I happened to spend ten days at his clinic last spring, and was exceedingly impressed. I had read of some of his work and found it exceedingly interesting. I watched his work all through the morning and spent the afternoon and most of the following night in reading his book. His work simply emphasized what I said just now regarding the requirements. There is nothing about it that is mysterious. Nothing that is very different from what we knew before.

I will not go into details about any one fracture, but the thing that impressed me more than anything else, as Dr. Wilcox pointed out briefly, was the fact that we must get these fractures when they are fresh. We must appreciate that every hour lost is to the bad. We used to approach them with the idea that any time within ten days was time enough, that callus does not begin to form before the tenth day, but that must be revised. That is much too late to get the best results.

Boehler, in his work, requires rather a moderate instrumentaria. The work requires a moderate knowledge of physiology and so forth. It is a treatment that I think can be popularized in spite of the fact that many have said it is not the treatment for the man in the small town. I think the procedure can be easily carried out. The anesthesia is almost invariably of the type which can be obtained with a hypodermic needle used locally in the site of the

fracture itself, or conduction anesthesia, or spinal anesthesia, all of them easy of application and fairly safe.

Another high spot, as Dr. Wilcox said, is the lack of padding. Boehler practically refuses padding, and this can be done. Since my return I have treated probably 100 cases without padding and we have obtained good results. It is in the trick of putting on the plaster of Paris—laying it on, not pulling it.

Another high spot is the early function. That, to my mind, is a big advantage in Boehler's work. For example, one of the Minneapolis ladies broke her ankle, a typical Pott's fracture. She greeted me with the following remark, lying on a settee. She said, "Doctor, I have a ticket to California and I am leaving day after tomorrow and I am going to walk to the station." I said, "Yes ma'am, that's just what you are going to do, and if you do not there will be trouble." And she did.

Boehler gets his fracture cases up very early. In the morning where we saw many fractures we saw no massuers or physiotherapists. We saw no crutches. The patients all use canes, and in many of the ankle cases the patients are on their feet at once. You will hear more of Boehler's work. You may be interested to know that Boehler is coming to Minneapolis and will address the Minnesota State Medical Association in Duluth at the annual meeting. If you will come over I am sure you will be much impressed with his work. I think I am within my rights in inviting one and all of you to come over to Duluth and give us a call at our meeting.

I thank you.

PROCEEDINGS OF THE MINNEAPOLIS SURGICAL SOCIETY

Meeting of October 2, 1930

The regular monthly scientific meeting of the Minneapolis Surgical Society was held in the lounge of the Hennepin County Medical Society in the Medical Arts Building on Thursday evening, October 2, 1930, at 8 o'clock.

The meeting was called to order by the President, Dr. A. T. Mann. There were 21 members and two visitors present.

Minutes of the May meeting were read and approved. The Committee on Revision of the Constitution and By-laws reported the changes which had been made, and a motion was carried that these be approved as read.

The scientific program consisted of two case reports and a thesis.

DR. O. W. YOERG reported a case of "Actinomycosis of the Abdomen."

The patient is a woman 44 years of age. Her past history is negative. She is the mother of four children, the youngest eight and the oldest fourteen. Her history was negative until February, 1928, when she was taken with what appeared to be an attack of acute appendicitis. An abscess was found, the appendix was removed and drainage instituted. She had a normal convalescence. The wound healed within four or five weeks and remained healed. She went back to her home on a farm and continued well for almost two years. She then went to her home doctor complaining of pain and a swelling in the right abdominal wall to the left and a little above the old appendix scar. The doctor watched her for a few weeks and then opened the indurated swelling and found a thin,

serous pus. That was in December, 1929.

In January, 1930, Dr. Yoerg saw her and his first impression was that a piece of gauze or something had been left in the abdomen at the time of operation. Under local anesthesia he opened the abdominal wall widely and found a number of sinuses and abscess cavities. Sections were taken, and Dr. Smith, pathologist at Northwestern Hospital, reported nothing more than inflammation of a chronic type. The condition improved and finally healed. Two months later the patient developed a mass on the left side of the abdomen. This was hard, and as it became larger her doctor opened it and found several abscesses in the abdominal wall. In April, 1930, Dr. Yoerg again opened the abdominal wall on the left side, this time under general anesthesia, and found sinus after sinus. Several sections and also some pus were taken at this time, and again the report came back from the laboratory that it was inflammatory. Dr. Yoerg stated that the diagnosis uppermost in his mind was a foreign body; it did not appear to be tuberculosis. He wished to state, however, that he had thought of actinomycosis and had looked for the granules but had found none.

In June, 1930, the patient returned to Northwestern Hospital. She was enemic and complained of pain in the right leg. There were numerous sinuses over the abdominal wall. Gastrointestinal x-rays made at this time were negative. The leucocyte count was about 10,000; temperature ranged from 99.5° to 102° and 103°. A number of men saw her, among them Dr. Bulkley, who confirmed Dr. Yoerg's diagnosis of a foreign body. The abdomen was again opened and an abscess was found. Inside this abscess cavity was a mass which shelled out very readily; this mass appeared to be ovary, but on opening was found to be infiltrated with pus. This specimen was sent to the laboratory. Unfortunately a fecal fistula formed after this operation. On account of Dr. Smith's absence, the specimen was sent to Dr. Drake at the Swedish Hospital. About a week later Dr. Drake reported to Dr. Yoerg that he had found the ray fungus in the specimen. Since then Dr. Yoerg had also found a granule, the only one he had been able to find so far in the case.

The woman is still in the hospital and has considerable edema in the right leg although the pain has been less. Her hemoglobin is down to about 30 per cent. She was put on potassium

iodid but did not tolerate it. This was discontinued and she was put on Lugol's which she tolerates very well. In addition to this medication, Dr. Allison has given her four doses of deep x-ray therapy. The fecal fistula closed in about three weeks and since then the patient has apparently been holding her own. Dr. Yoerg said, however, that yesterday he could feel a mass just above the bladder.

Dr. Yoerg stated that his reason for reporting the case was that abdominal actinomycosis is rare, especially in women. The best information he could find was in an article by Sanford, of Rochester, who had collected reports from various hospitals and Boards of Health and had found 690 cases reported in the United States up to 1926. Out of this number 80 per cent were in men. And only about 18 to 20 per cent of all actinomycosis is abdominal.

DISCUSSION

DR. WILLIARD WHITE asked Dr. Yoerg if he had used copper sulphate in this case.

DR. YOERG stated that Bevan, in Chicago, was the first man to use copper sulphate extensively, but some men seem to think it does not change the results. He also stated that actinomycosis rarely follows the lymphatics; it goes by extension and may invade the veins; but whether or not the lymphatics are entirely free, he did not know. It does follow tissue contiguous to the lymphatic.

DR. E. K. GREEN asked Dr. Yoerg's opinion as to the portal of entry.

DR. YOERG replied that this is open to question. Some authorities claim that it is not transmitted from cattle to man; whether it is or is not, is a moot question. It is found in some grains and grasses, and it is thought that people pick up and chew the grasses and the disease enters the system in that way. The usual case, of course, is "lumpy jaw." Most of the abdominal cases which Dr. Yoerg had found reported gave a history of having had an operation for appendicitis. In his own case, just reported, Dr. Yoerg said there is a question in his mind as to whether the condition was there at the time of the appendicitis operation, since the patient had recovered and had remained well for almost two years.

DR. O. H. WANGENSTEEN stated that they had had two cases of abdominal actinomycosis at the University Hospital. A lethal outcome followed in both instances and he understood that to be the usual occurrence in most instances of abdominal actinomycosis. The usual origin of the abdominal type is in the cecum; infrequently, however, as Bruce, of Toronto, has pointed out, the disease in the cecum itself heals, leaving no vestige of its previous existence there, but an induration of the abdominal wall and sinuses persist. This form of the

disease is more likely to get well. Bruce has suggested "right lower quadrant" actinomycosis as being a more appropriate designation than cecal actinomycosis.

This tendency for the site of origin of the disease to heal completely is a well known fact in the facial and cervical types of the disease. The patient usually contracts actinomycosis by chewing grain or grasses; the organism, *Actinomyces bovis* lodges about the teeth, and when the diagnosis is apparent no trace of the disease can usually be seen within the mouth.

Recently a patient with an abscess of the tongue presented himself for examination at the University Hospital. It was first believed that this was an abscess of the unobliterated upper portion of the thyroglossal duct tract. Most primary abscesses of the tongue, however, are due to actinomycosis and when search was made for the organisms they were readily demonstrated.

The results of treatment of actinomycosis on the whole are unsatisfactory, due largely to the fact that most cases present themselves late for treatment. Sporotrichosis is the only fungus infection in which iodine is a specific. The actinomyces may grow in a solution of potassium iodid. Iodine given in large doses, however, appears to be of definite value. Good results in the cervico-facial type have been obtained with deep x-ray and radium treatment. In the early case, however, curettement or surgical excision appear to be measures of greater value. The local use of copper sulphate, as suggested by Dr. Bevan, in the treatment of blastomycosis, is of no value.

DR. E. A. REGNIER recalled a case of abdominal actinomycosis in a woman whom he operated upon three years ago. The case was that of an appendiceal abscess, which was drained. The abdominal wound healed in three weeks. The patient returned three weeks later with high fever, and pain in the upper right quadrant. At this time a subphrenic abscess was drained by a two stage operation. A large quantity of serosanguinous pus was removed. On the third day sulphur granules were recovered from the wound. The singular finding in this case was that the appendix, which was about one inch in diameter, was sectioned serially, and no signs of actinomycosis were found. Dr. Regnier said he had looked up the literature at that time and most writers were of the opinion that the disease was spread by contiguous infection. In his own case, the first manifestation was the subphrenic abscess, which speaks for infection through the lymphatics. The infection never appeared in the abdominal wall, but multiple sinuses appeared in the dorsolumbar region. In looking up the subject of therapy, he found that almost everything had been used. In Dr. Regnier's case, massive doses of deep x-ray, and potassium iodide by mouth, had been used but therapy had no effect on the progress of the disease.

DR. A. T. MANN stated that he had seen two such cases and in both of them the discharge contained a fair number of these bodies; in fact the sulphur granules could be seen with the eye quite readily.

In regard to the character of the growth and the

pathology, Dr. Mann stated that it is the result of an irritation of the tissues, a granuloma in its growth. There is more or less destruction of the cells immediately about the infecting fungus, followed by attracted leucocytes and the proliferation of granulation tissue round about it. As a rule it is very slow to produce pus. The streptothrix does produce pus at times and some of the granuloma breaks down, but a good many of the suppurations come from secondary infection in the area of those granulomata. One might be misled in making an early diagnosis because of the firmness of enlargement, and think the case possibly a sarcoma.

As to the spread of infection, secondary infection, and so on, Dr. Mann said that it is most like a septic pyemia or like sarcoma in its secondaries. The granulations grow into the veins and produce a secondary from small emboli mostly, just as the secondary infections from pyemia and from sarcoma.

Dr. Mann said that what had been stated tonight in regard to treatment he had found to be true when he was reading the literature on this subject. Many things had been tried but potassium iodide seems to be considered more favorably than any other one thing. And while it is true, as Dr. Wangensteen stated, that the streptothrix will grow in a solution of 1 to 2 per cent potassium iodid, that is not all there is to medication. It may also do something toward stimulating the surrounding tissues or other groups of tissues, with resulting destruction of the streptothrix.

Dr. Mann also called attention to the fact that although most of these infections are supposed to get in with some food, about 20 per cent of the cases are found in people who have cavities in the teeth and the streptothrix has been found in the teeth; in fact it is sometimes found in the teeth cavities when the actinomycosis is not active in the patient.

Another interesting feature is the number of cases of infection of the lungs, with symptoms simulating tuberculosis of the lungs, and in which the resulting deaths have been credited to tuberculosis.

DR. YOERG, in closing, stated that in Sanford's collection the larger percentage of cases were found in the upper Mississippi Valley. Various treatments had been tried; some had used salvarsan, and some had given yeast. This was the first abdominal case Dr. Yoerg had seen and it occurred to him that opening up the abdominal wall, curetting the sinuses and packing them would yield the best results. He thought the trouble lay deeper; that it was intra-abdominal and probably involved the veins of the hip and thigh.

Dr. R. C. Webb and Dr. E. R. Anderson reported a case of "Abscess of the Liver Complicating Acute Appendicitis."

Dr. Webb presented the patient, a fifteen year old boy, on whom he had operated for ruptured appendix one year ago. He called attention to the scar of the appendicitis operation and stated that the drainage used was the Gib-

son tampon described by him before this Society in 1923. No sutures were used in the wound. Three weeks later it was necessary to make an upper right rectus incision and drain a liver abscess. He asked the members to notice the absence of hernia in the lower scar even though it was a very large wound without sutures. In the first operation it was the usual serious ruptured appendix case. Dr. Webb asked Dr. Anderson to read the case report and review of the literature.

DISCUSSION

DR. J. A. JOHNSTON said the doctors should be congratulated in having secured this boy's recovery. He had seen four cases of liver abscess secondary to appendicitis. They all died. In every one of them the liver was filled with miliary abscesses, some of which had broken down into larger abscesses. Dr. Johnson said he could not see how this type of liver infection could recover. This led him to believe that one should undoubtedly consider two types of liver abscess, that is, the miliary type with diffuse abscesses, which undoubtedly does not recover; and the other, perhaps the occasional one, with a single abscess which does recover. He believes that surgery should be resorted to in these cases because without it the outcome is usually hopeless.

One point Dr. Johnson wished to stress in regard to aspirating liver abscess. Many years ago he was present at a post-mortem in which the man had had a liver abscess aspirated. The pus was very thick and did not flow through the needle and several attempts had been made in different parts of the liver to find the abscess. At post-mortem in every place where the needle had been inserted a new culture had been implanted and there was an abscess from each needle insertion. Since that time he had always been very careful, using very large needles if the pus is very thick, and always changing the needle each time a puncture is made in a different location.

DR. W. P. HERBST, in discussing the matter of drainage of liver abscess, thought that the method of sewing the liver to the abdominal wall was probably one of the main factors in the recovery of the patient. He stated that some men, in draining liver infections, would sew the area around the abscess to the peritoneum of the abdominal wall, leaving the wound open and later opening the abscess when the infected area was walled off from the peritoneal cavity. Where the anatomical relationships do not allow this sort of procedure, the next best thing is to use large amounts of iodoform gauze to form a walled off area in the region of the abscess to prevent abdominal infection. The method is one of walling off the abdominal cavity.

DR. THEODORE SWEETSER called particular attention to the importance of chills in raising the suspicion of possible liver abscesses. He also called attention to the good fortune in Dr. Webb's case, in that

there was no infection of the portal vein system. In entering the liver, the infection evidently did so without a purulent infection of the veins, which, of course, would have made the case almost hopeless.

DR. LEO MURPHY thought it would be interesting to know whether the cases reported are based on single or multiple abscesses of the liver. He felt that Dr. Johnson's point was very pertinent as far as liver abscess is concerned.

DR. MARTIN NORDLAND said that it would be natural to question what the surgeon could do to prevent an abscess of the liver when operating upon a case of suppurative appendicitis. We advised applying the ligature to the meso-appendix as far away from the appendix as possible, as suggested by Dr. Jackson. This would exclude the thrombi in the small veins.

DR. THEODORE SWEETSER suggested, as a measure for the prevention of such disasters, that the meso-appendix be carefully observed in order to discover thrombosis of any veins, ligating beyond any thrombus found.

DR. WANGENSTEEN felt the point raised by Dr. Sweetser with reference to the occurrence of chills in acute appendicitis to be very significant and he recalled seeing a patient who gave this history early in the course of the disease while a junior house officer at the Colonial Hospital in Rochester. No special note was made of the chills by the surgeon in attendance. At operation a diffuse suppurative process without peritoneal extension was found. In the convalescence, chills continued and the patient died. At autopsy a pyelephlebitis and multiple abscesses in the liver were found.

The occurrence of chills is synonymous with the presence of bacteria in the blood stream, and in acute appendicitis it signifies thrombosis of the mesenteric lumen of the appendix. Professor Melchior, of Breslau, has performed a successful secondary operation when chills occurred in the immediate convalescence after appendectomy, ligating and excising the mesenteric lumen of the appendix high in the ileocecal angle. Melchior states that about eight successful secondary operations of this nature are to be found in the literature.

DR. MANN said he wished to call attention to one point in regard to statistics showing the high percentage of liver abscess after appendicitis operations in the old reports. He said that in those days cases of appendicitis did not usually get into the hospital unless they had an abscess, and almost every operation in those early days was a pus appendix. He believed if the later statistics could be revised, taking only the abscess cases, one might get figures nearer the older statistics. He felt that the real point in the mortality of these cases lay in the fact that there is an accompanying septicemia or there are multiple abscesses. He was of the opinion that if several abscesses were close together and they could be broken down with the finger into one cavity and drained they might recover, but if there were multiple abscesses and some were not drained they are more likely to be fatal.

DR. WEBB, in closing, thanked the members for

their generous discussion of the case. The boy had presented the usual appearance of a case of appendicitis, such as all the members had seen, and the case was one which was apparently going to die. The operation was performed as a rather extreme measure in this case, but Dr. Webb felt that, after seeing this boy and hearing the discussions of the case, the members would all have more courage to operate upon and drain these liver abscess cases earlier and more frequently than they had before.

DR. ANDERSON, in closing discussed some of the things which might be done to prevent liver abscess, and stated that Wilms resected the veins that were thrombosed in the ileocecal angle and had cases of recovery. Braum ligated the ileocolic vein and has reported successful cases. Colp, of New York, experimented with gradual ligation of the portal vein in dogs and they lived. He tried the same procedure on three patients who had an extreme grade of thrombophlebitis and had been unsuccessful in obtaining recoveries. This was discussed to a greater extent in the paper under the section on treatment, the reading of which was omitted on account of the time limit.

Dr. Oswald S. Wyatt read his thesis entitled "Congenital Hypertrophic Pyloric Stenosis." (To be published later.)

DISCUSSION

DR. WILLARD WHITE stated that he had enjoyed this paper very much and there were two or three points he wanted to mention. He called attention to Dr. Wyatt's method of making an incision through the hypertrophied muscle, and then continuing by spreading with forceps, but Dr. White felt that using the blunt end of the scalpel furnished a safe way to accomplish this and avoid opening the mucous membrane. He believed it advisable to close the abdominal wound with mattress sutures tied through buttons, especially if the infant was in poor condition and one wished to save time. He felt that the use of buttons was a very great advantage as the sutures would hold securely and there was very much less cutting of the skin by the sutures.

Dr. White felt that the conservation of heat during the time of operation is also an important factor, and the infant should not only be wrapped in cotton batting but the batting should previously be warmed in some kind of warming device and, in addition, hot water bottles should be kept around the infant during the time of operation.

Dr. White was of the opinion that there is very much less objection to a general anesthetic in these operations than is often thought. One hears much emphasis placed on local anesthesia, and that is all right, but one's strategy is very important in these cases, and unless the operator is very careful in the use of local he may cause pain and resulting shock; and in the avoidance of shock, Dr. White felt that general anesthetic is preferable.

DR. GREEN asked Dr. Wyatt what he thought of the Strauss method of technic in the cases where a muscle flap is used to cover over the mucous membrane. Dr. Green said when he was in Chicago

he heard Dr. Strauss discuss his operation at some length and also saw him do an operation. It seemed to Dr. Green that the benefit derived was hardly worth the extra time and trouble as compared to the Rammstedt operation, and he would like to have Dr. Wyatt's opinion about it.

DR. THEODORE SWEETSER brought up a point which had been stressed by Dr. R. E. Farr in discussing this subject some years ago, and which also had been called very strongly to his own attention in a case he happened later to see in one of the hospitals. In the latter case the baby was given ether anesthesia before the surgeon and his assistant were ready to operate, so that the baby was exposed to the anesthetic an unnecessarily long period of time. That might have been avoided under local anesthesia. If the operation is to be done under general anesthesia, everything in the operating room should be so arranged as to avoid unnecessary delay after the child is put to sleep.

DR. WYATT, in closing, said that he was familiar with the Strauss method of operation as mentioned by Dr. Green, but that he had never used it himself as he had had such very good results with the Rammstedt operation that he had not tried any other. In reading up on the Strauss operation, Dr. Wyatt was under the impression that it would take a little more time and he had not thought it advisable to use it.

The meeting adjourned.

H. O. MCPHEETERS, M.D.,
Secretary.

STREPTOCOCCAL INFECTIONS OF EPIPHYSES AND SHORT BONES

Bacteriologic studies were made by D. B. PHEMISTER, ALEXANDER, BRUNSCHWIG and LOIS DAY, Chicago (*Journal A. M. A.*, Oct. 4, 1930), of biopsied material of two cases each of Kohler's disease of the tarsal scaphoid, Legg-Perthes' disease and Kienbock's malacia of the os lunatum. Streptococci grew in cultures of four cases and cultures of two remained sterile. A streptococcus which on blood agar plates was more hemolysing than green-producing and on dextrose blood agar plates was more green-producing than hemolysing grew on cultures of one case of Kohler's disease showing acute symptoms. Green-producing streptococci grew on cultures of one case of Legg-Perthes' disease and one case of Kienbock's malacia. A streptococcus which was not further identified grew in cultures of one case of Kienbock's malacia. One case of Kohler's disease, cultures and guinea-pig inoculations of which were negative, occurred in association with multiple osseous and lymph glandular tuberculosis. One case of apparent Kohler's disease developed following traumatism. These observations, assert Pheimister et al., suggest that streptococci play an important rôle in the etiology of these diseases but that other factors may also bring them about. Whether the streptococci reach the bone in an embolus which blocks the main artery or whether they lodge there alone remains undetermined.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of October 8, 1930

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, October 8, 1930. Dinner was served at 7 o'clock and the meeting was called to order by Dr. F. E. Burch, chairman of the executive committee, in the absence of the president and vice president, at 8 o'clock. There were 46 members and two visitors present.

Minutes of the September meeting were read by Dr. Carl B. Drake, in the absence of the secretary. These were approved.

Letters were read from Drs. F. L. Adair and Frederick W. Schultz, of Chicago, and Dr. H. C. Cooney, of Princeton, Minn., each thanking the members for his election to Honorary Membership in the Academy. A letter was read from Dr. R. O. Beard calling attention to the meeting of the Postgraduate Assembly in the Minneapolis Auditorium, the week of October 20, and extending an invitation to attend.

Dr. H. P. Ritchie, of St. Paul, read the following memorial to Dr. Arthur A. Law:

ARTHUR AYER LAW was born at Harvard, Illinois, April 16, 1872, and died at his home in Minneapolis, July 9, 1930. He was active in attendance upon a large and select surgical practice until May, 1930, at which time some premonitory symptoms developed to a point which required a complete cessation of his work.

After graduation at the Shattuck Military Academy he entered the University of Minnesota Medical School, from which he received the diploma of Doctor of Medicine with the Class of 1894. From that time on he held a teaching position in surgery, advancing through ever increasing responsibility to that of Associate Professor of Surgery and at one time Assistant Chief of the Department. He was a prominent member of the first surgical staff of the University Hospital, which was formed upon the opening of that institution, under the masterly direction of the late Dr. James E. Moore. He took a great part in the development of the school; was positive in his opinions on policies of administration and forms of teaching, was not always in accord with others as becomes a man of individuality, but was ever constant in the hope for, and belief in, the fu-

ture growth of the school; was generous of his time, tireless in effort, deep in his interest. He was always prompt to meet his lecture engagements; he was exacting in the proper care of his patients. He early developed a reputation, augmented and enhanced as the years went on, as a surgeon known for the dexterity, celerity and precision of his operative work. His association with the University continued until 1929, when, upon his resignation, he received from the Board of Regents an acknowledgment of his years of service, couched in positive terms of appreciation, a document of which any one would be proud and which few are entitled to receive.

He was an officer in two wars. In the Spanish American War he was Captain and Assistant Surgeon of the 13th Regiment of Minnesota Volunteers, serving in that position during the entire term of duty with that regiment in the Philippines. In the World War he was Colonel and Commanding Officer of Base Hospital No. 26 and served in France. He received a citation from General Pershing for "service over and beyond the call of duty." This official statement is a fitting epitaph.

He had a standard of impeccable personal conduct, a strict and stern sense of the responsibility of his work, a devotion for and to his family. Those who were privileged to enter his beautiful home found in him a thoughtful, generous, and gracious host. To his close friends he gave, to quote a favorite and oft repeated expression, "a touch of the shoulder."

He was a member of other local societies and several of national scope: the American Surgical, the Western Surgical, the Southern Surgical, the American College of Surgeons, to each one of which he has presented contributions to the science of surgery. He was long a member of the Minnesota Academy of Medicine, and upon the occasion of his death your committee offers the following resolution:

WHEREAS: Arthur Ayer Law has passed from this life, his membership in the Minnesota Academy thereby terminated and personal contact severed,

BE IT RESOLVED, that the Academy of Medicine acknowledge the years of their association,

express regrets at his departure, cause the above sentiments to be spread upon the minutes and instruct the Secretary to send a copy to his family.

Signed: H. B. ZIMMERMANN,
MARTIN NORDLAND,
HARRY P. RITCHIE, Chairman.

The scientific program of the evening was then taken up.

Dr. J. Charnley McKinley (Minneapolis) read his thesis entitled "Familial Diffuse Sclerosis of the Brain."

Drs. F. E. Foley and Arnold Schwyzer (St. Paul) presented a paper on "An Improved Pelvioureteroplastic Operation for Hydronephrosis." Dr. Foley read the paper which was illustrated with numerous lantern slides.

DISCUSSION

DR. H. P. RITCHIE (St. Paul): The only comment which I feel qualified to make on this very excellent presentation is on the question of the flap of the pelvis. The flaps as shown appear entirely too acute. I presume this is only apparent in the illustration and not real in the operation. We know that the life of a flap is dependent on the blood supply to all parts of it. It seems to me that with all the abundant tissues of a dilated pelvis it would be just as easy to prepare the flaps in such a way as to be very sure of the maximum blood supply. I was thinking of the death of some part of the flap and an inflammatory stricture.

DR. FOLEY: I would like to ask Dr. Ritchie about what angle he would think was best for cutting the flap.

DR. RITCHIE: I suggest a little wider sweep on the tip; a curve and not such an acute angle. In skin flaps, if the flaps are too sharply cut a necrosis of the tip follows.

DR. FOLEY: It would be difficult to make the point of the flap fit down onto the ureter. The flap is quite short. I would say the angle is about 60 degrees.

DR. RITCHIE: I am not familiar with the size of the flap. If it is so cut, my comment is of no value.

DR. SCHWYZER: I am very happy that Dr. Foley took the interest that he did in this procedure. If I was father of the child, he was the doctor who saved the child from the death of oblivion, and has shown a modification of the procedure which in appropriate cases yields a perfect result.

In answer to Dr. Ritchie's remarks, of course we want to be sure that we have a living flap. The important feature is that the stricture is held open not by the tip, but by the base of the flap, which is at this point about one cm. wide. Thus, even if the tip should necrose, which it has not done so far, it would be at least one cm. away from the danger point. It is, of course, good to watch out

for the proper circulation. There should not be any tension on the flap at all.

The meeting adjourned.

R. T. LAVAKE, M.D.
Secretary

ACAPNIA AS FACTOR IN POSTOPERATIVE SHOCK, ATELECTASIS AND PNEUMONIA

YANDELL HENDERSON, New Haven, Conn. (*Journal A. M. A.*, Aug. 23, 1930), states that the causal sequence leading to surgical shock (apart from hemorrhage) and that leading through atelectasis to postoperative pneumonia are closely related. Both originate in acapnia, one through depression of the circulation, the other through depression of respiration. Acapnia, or deficiency of carbon dioxide in the blood and tissues, is a condition closely related to asphyxia, or deficiency of oxygen in the tissues. Either of these deficiencies disturbs the respiratory processes of the tissues, and each involves a considerable degree of the other. Experimentally, a slight degree of acapnia may be induced by over-ventilation of the lungs. A more intense form, capable of producing death by failure of respiration, may result from the excessive breathing in the first stage of badly administered anesthesia. But in the most severe form of acapnia leading up to surgical shock, the deficiency of carbon dioxide, or decrease of alkali bicarbonates in the blood, arises from a disturbance of the respiratory metabolism of the tissues analogous to asphyxia. Inhalation of carbon dioxide effects a restoration of the alkali bicarbonates and carbon dioxide content of the blood. The depression of the circulation after operation and anesthesia (nonhemorrhagic shock) is due to the lowered activity of the respiratory and other nerve centers that influence skeletal muscles. The result is an atonic condition of all the muscles of the body and a decrease of muscular pressure on the tissues which permits the blood to stagnate in the venules and decreases the venous return to the heart. This depression of the normal venopressor mechanism is counteracted by inhalation of carbon dioxide. The consequent increase of muscular tonus augments the venous return and restores the volume of the circulation. After every major surgical operation there is not only a decrease in the volume of air breathed but also a prolonged loss of tonus and relaxation in the thoracic muscles and the diaphragm. The vital capacity of the thorax is thus greatly decreased; the lungs are correspondingly deflated, and occlusion of pulmonary airways readily develops. The air in the occluded lobules, lobe or lung is then absorbed, and atelectasis is produced. If pathogenic organisms are present they find in the un-aerated, undrained area conditions which favor their growth, and pneumonia may result. Inhalation of carbon dioxide by counteracting acapnia and inducing deeper breathing inflates the lungs and prevents the development of atelectasis. It is thus a specific preventive of the postoperative pulmonary complications that lead to pneumonia.

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—25—47.

A man, 60 years of age, about January 8 had been doing some heavy lifting and felt a sharp pain in the left side of his chest. He continued to work, however, until January 15. On the morning of this day he was first seen by a physician. He complained of pain in the precordium and left chest with dyspnea. He stated that these symptoms had begun early that morning. Past history negative, as regards present illness.

Examination showed the left border of the heart about the middle of the sternum. Very marked hyperresonance of the left chest. Faint breath sounds on the left side. Normal breath sounds on the right. Heart beat regular; no murmurs; pulse rate 100. Liver about 3 cm. below the costal margin on the right side. No abdominal rigidity; no tenderness.

Patient could swallow fluids but they were immediately regurgitated. Apparently nothing would pass into the stomach. Attempts to get x-ray of the stomach failed for this reason. No bowel movements after January 15.

January 16, no breath sounds heard in the left chest. Tympany of entire left thorax. Marked dyspnea. Respiratory rate 35. Heart still further toward the right. All food or liquid that was swallowed was immediately regurgitated. Enemas gave no result. The pain and dyspnea continued, becoming more intense. The temperature was subnormal.

January 17, respiratory rate 40; pulse 130. Death January 18.

Postmortem report. The right pleural cavity and lung are normal. The left pleural cavity contains a large amount of air which rushes out when the thorax is opened. The left lung is completely collapsed. In the left thorax are found the greater part of the stomach, the spleen, the splenic flexure of the colon, and a large part of the great omentum. These structures project through an opening in the left vault of the diaphragm. The cavity contains about 2,000 c.c. of fluid which is tinged with blood and contains intestinal contents. Air bubbles pass out of the stomach into the pleural cavity. There are several small penetrating ulcers in the fundus of the stomach. There is a sharp bend in the esophagus just above the cardia which explains the inability of food to pass into the stomach. The stom-

ach is compressed where it goes through the diaphragmatic tear. There is discoloration and softening of the greater part of the wall of the stomach; a number of small ulcers in the fundus and several of these have perforated into the pleural cavity.

Diagnosis. Diaphragmatic hernia through an old opening in the diaphragm.

Comment. Strangulation of the vessels of the stomach caused necrosis of the gastric wall with resulting perforations. Air and fluid passed from the stomach into the thoracic cavity.

Autopsy—30—1466.

The case is that of a white man, 55 years of age, first seen June 24, 1930. He had been a printer for about twenty years. During this occupation he had been exposed to hot lead fumes and handled hot lead with his bare hands. His past history was negative. He had always been well with the exception of a nervous prostration in 1918, the symptoms of which were suggestive of lead poisoning. He had never had syphilis and had never had any other serious disease. In 1917 he weighed 216 lbs. One year ago he weighed 175 lbs. Had rapidly lost weight until his present weight was 158 lbs.

His first symptoms began over two years ago with weakness and fatigue. Then he began to have cramplike pains in the lower abdomen, associated with severe constipation. This constipation was of so high grade that he thought he probably had an obstruction. The attacks of pain would last for a week or ten days and then would disappear, with the establishment of normal bowel movements. A few weeks following this trouble he began to have difficulty in swallowing, and noticed that he would also regurgitate mucus. He felt as if his food did not reach the stomach. Occasionally he had some heartburn associated with the difficulty in swallowing. He stated that he had a good appetite, but was afraid to eat because of the pain. He stated that the pain was only occasionally relieved by soda, and that it was present regardless of whether he took food or not. Only slight relief by belching. He stopped work on December 13, 1929, and was in the printers' home at Colorado Springs from January 8 to June 12, where the examiner found esophageal stricture. He stated that

he felt weak and fatigued.

Upon examination there was found a man who had lost a great deal of weight. He had normal temperature, pulse, and respiration. There were no enlarged lymph nodes. The antral sinuses were dark to transillumination. There were many teeth missing and there appeared to be a lead line along the lower central teeth; however, this was not typical. There was some retraction of the gums. The tonsils were small. The chest was negative. The heart tones were clear. The blood pressure was normal or had a tendency to be slightly below normal. The abdomen was negative. The liver was possibly slightly enlarged. There was very marked weakness of the extensor muscles of the arms and legs, as compared with the flexors. Muscle sensation was decreased in the lower extremities; joint sensation was also decreased. There was no incoördination. The deep reflexes were slow. The blood was normal. There was no basophilic stippling. The Wassermann test was negative. Lead was shown to be present in definite amounts in the urine as compared with a normal control. The urine showed a faint trace of albumin, but no other abnormal findings.

The x-ray examination in June showed a slight stricture of the esophagus just below the arch of the aorta, and a rather marked stricture with dilation above located at a few centimeters above the cardia of the stomach, and just above the level of the diaphragm. The rest of the gastrointestinal tract was negative except for a great deal of spasm. The duodenum was very irregular or could not be seen much of the time during the examination. An old healed duodenal ulcer was suspected.

Between June and the patient's death his esophagus had been repeatedly dilated with the Plummer dilators without any complications, and the patient's symptoms completely disappeared. There was a gain of weight of about 30 lbs. He had no abdominal pain or any distress during this time. The last dilation was done at 8 A. M., October 2, without difficulty and without pain. He reported to the doctor's office on October 4 and stated that he was feeling perfectly well, without any distress. On the afternoon of October 4 he went fishing and came home fatigued but otherwise was perfectly well. On the fifth, at 6 A. M., he began to have severe pains in the abdomen, and at 10 A. M. a physician was called who gave him a quarter grain of morphin. At 10 P. M. the physician saw him again and ordered him to the hospital, but the patient died before reaching the hospital. The physician states that the patient was pulseless, cyanotic, and had abdominal distension. He vomited once early in the morning when the attack began. The symptoms suggested coronary thrombosis, or, more likely, some peritoneal disturbance; they did not appear to be due to obstruction. Clinical diagnoses therefore were (1) chronic lead poisoning; (2) chronic duodenitis, probably healed duodenal ulcer; (3) chronic esophageal spasm with stricture and diffuse dilation of the esophagus above.

Post-mortem report. The peritoneal cavity contains about 1,500 c.c. of cloudy fluid containing some intestinal contents; the intestines are covered with

a thin fibrinopurulent exudate. Each pleural cavity contains about 1,000 c.c. of clear fluid. The heart weight 325 grams; no disease is found except cloudy swelling. The lungs weigh about 400 grams each; no change except atelectasis; no pneumonia. The spleen weighs 75 grams. The liver weighs 1,400 grams and shows cloudy swelling. There is rather marked stenosis of the last 10 cm. of the esophagus; the wall at this level measures 7 mm. in thickness. At the cardiac opening there is an ulcer about 3 mm. in diameter which has perforated into the peritoneal cavity. There are no ulcers in the stomach itself. There is an old ulcer 6 mm. in diameter in the duodenum on its superior surface near the pyloric valve. No other ulcers in the gastrointestinal tract. Cloudy swelling of the kidneys.

Microscopic examination of the esophageal ulcer shows a subacute inflammation around the ulcer; there is no malignant change.

Diagnosis. Perforating ulcer of the cardia with generalized peritonitis.

Comment. This may be regarded as a peptic ulcer since it is situated at the point of junction of the esophagus and stomach. The peculiar clinical history is no doubt due to the fact that the ulcer caused cardiospasm. The cardiospasm was of such degree that it resulted in hypertrophy of the esophagus above. The obstruction was also organic to some extent since there was inflammation in the walls of the esophagus.

Autopsy—30—1222.

The case is that of a girl, 14 years old, admitted to hospital July 16. She had been well up to October, 1929, when she suddenly developed fever, sore throat, malaise, and joint involvement; right great toe joint first to be involved; next the ankles, knees, wrists, and finger joints; the joints were swollen, red, hot, and painful. While one joint improved, another became involved. Complete recovery of joint condition occurred about January 1, 1930. While in bed she did not have any shortness of breath or precordial distress but passed large quantities of dark colored urine. In February she was out of bed but was extremely weak and moderately short of breath. Two weeks later she was walking around with no cardiac pain or disturbance but she would develop attacks of dyspnea, especially on climbing stairs. Through March and April she remained at home. She had very little ambition and tired easily on exertion but had a fair appetite. In March she had influenza (so-called) but was not confined to bed. She coughed and raised some blood in the sputum. In May she had a spell of vomiting for a period of two weeks, once or twice a day. She recovered under medical care.

Since June she had been confined to bed. Appetite was good, bowels regular, and there was no fever. She coughed considerably but raised only a small amount of sputum, not blood tinged. She had been short of breath but there had been no orthopnea or precordial pain. While in bed her face first became swollen; then the edema left the face and appeared in the feet. The feet and legs were now considerably swollen most of the time.

For a short time she had had to be raised up in bed for breath. Appetite failed in the last two weeks and urine became scanty. She had had skin lesions on the arms and legs, partly healed over now, since June 1.

Father and mother living and well. Patient second child; two brothers and two sisters living and well.

Examination. Patient was sitting over side of bed; slightly dyspneic and cyanotic; apparently in no pain; in good mental condition. Tonsils enlarged. No enlarged nodes in neck. Chest showed dullness on the right to the fourth dorsal spine and on the left to the sixth or seventh dorsal spine. Breath sounds decreased over lower chest; moist râles in left axilla and lower left chest posteriorly. Decreased vocal fremitus in both lungs posteriorly. Heart enlarged to left, of mitral type; apex in sixth interspace in anterior axillary line; loud systolic murmur heard best at apex, well transmitted over precordium and into axilla. Diastolic murmur present over base. Most sounds at apex replaced by murmur. Rhythm normal; rate slightly increased. Abdomen showed marked ascites. Liver apparently palpable but not tender, 2 to 3 cm. below costal margin. Spleen not enlarged. Marked edema of hands and feet. Joints grossly normal. No cupping of fingers. No capillary pulse. Patellar and biceps reflexes decreased. The skin was cyanotic; no pigmentation; acne like eruption over face and back of neck. Ulcerating, papillary type of lesion from 3 to 5 cm. in diameter over anterior surface of legs; conformed to no particular pattern and was not much indurated. The back was negative. Blood pressure 130/80.

Urine: specific gravity from 1,003 to 1,021; sugar negative; albumin at times negative, at times slight to moderate amount; sediment, numerous granular casts; many white blood cells. Blood: hemoglobin 110 per cent; white cells 11,250; polymorphonuclears 73 per cent; lymphocytes 27 per cent. P. S. P. 40 per cent and 10 per cent. Urea nitrogen 25.2 mg.; chlorids 445 mg. Stools negative. Blood urea nitrogen 56.93 mg.; chlorids 412 mg. Blood urea nitrogen 84 mg. August 16; again 117.4 mg; uric acid 21.5 mg.

X-rays: marked elevation of right diaphragm; dense shadow in right base which suggests localized thickening of pleura; cardiac outline shows straightening out on left and fullness in this region, suggesting mitral disease. Only slight displacement of left auricle; shadow broadened at base suggesting increased amount of pericardial fluid. Later, same findings with exception of right pleural effusion.

Eyegrounds negative. Skin consultation: secondary excoriation possibly due to edema. Electrocardiogram, right preponderance; prolonged A-V conduction; rheumatic mitral disease; T ii and T iii negative. Later, auricular fibrillation and left ventricular extrasystole. Blood pressure varied from 130 to 145 systolic and 55 to 75 diastolic.

Therapy: tincture of digitalis, digitalis leaves, salyrgan, morphin sulphate, ice caps, novasurol, caffein sodium benzoate, venesection, luminal, gastric lavage, proctoclysis of glucose, intravenous glucose.

July 18: fluid in both pleural cavities; no thrill over precordium; pitting edema of back; slight tenderness on Murphy percussion; capillary pulsation suggesting waterhammer pulse.

Impression: rheumatic endocarditis, mitral insufficiency and stenosis, and aortic insufficiency; marked cardiac insufficiency and acute diffuse glomerulonephritis.

August 6, patient not doing so well; developed gallop rhythm; now fibrillating. August 8, 150 c.c. output; did not look well; increased pericardial effusion. August 9, venesection. August 14, failing rapidly; semistuporous; marked icterus; deep cyanosis; heart the same; a few petechia scattered over the body, which suggested acute endocarditis; also the possibility of toxic change in the liver. Elevation of blood metabolites probably associated with liver and kidney damage. August 15, moribund; acetone odor of breath; suggestive consolidation in right upper lobe with definite tubular breathing; small area in left apex with tubular breathing; passive terminal right lobar pneumonia. Death August 15.

Post-mortem report. Marked edema of the lower extremities and back; marked jaundice; recent hemorrhages in the skin over the face, chest, abdomen, and extremities. Right pleural cavity 1,000 c.c., left 500 c.c., pericardial cavity 400 c.c. of clear yellow fluid. Heart 425 grams; hypertrophy and dilation of right and left ventricles and left auricle. Old healed rheumatic lesions of the aortic and mitral valve with distortion of the leaflets, resulting in both stenosis and insufficiency; fresh rheumatic vegetations over the leaflets of both of these valves; some fresh rheumatic vegetations in the left auricle above the mitral. No pneumonia; no infarcts in the lungs. Spleen weighs 125 grams. The liver weighs 1,150 grams; chronic passive congestion and yellowish discoloration. The kidneys are swollen and of yellowish color, due to jaundice.

Microscopic examination of the kidneys shows acute glomerulonephritis.

Diagnoses. Recurrent rheumatic endocarditis of the mitral and aortic valves with stenosis and insufficiency; hypertrophy and dilation of the heart with passive congestion of the viscera and edema, hydrothorax, and hydropericardium; terminal acute glomerulonephritis.

Comment. The old valvular defects of the mitral and aortic probably developed in the attack of rheumatic fever which the patient had in October, 1929. The fresh vegetations represent a recurrence which she had at the time of death. The edema and fluid in the serous cavities as well as the passive congestion of the viscera are explainable on the basis of cardiac failure. The jaundice is probably due to passive congestion of the liver and toxemia. The acute diffuse glomerulonephritis was a terminal event in this case. This kidney complication is frequent in subacute bacterial endocarditis but quite rare in rheumatic endocarditis. The pathologic diagnosis of recurrent rheumatic endocarditis is based upon the finding of fresh rheumatic vegetations on old scarred leaflets.

Autopsy—30—1338.

The case is that of a little girl, six years old, admitted to hospital August 15, 1930. She had been perfectly well up to August 11 but at 8 P. M. complained of a chill. Went to bed; temperature not known. Played the next two days but complained of pain in the lower abdomen on the left side, especially on walking. No nausea, vomiting, headache, or sore throat. No earache; no gastrointestinal disturbance. August 14 complained of pain in passing urine. No other urinary complaints. Pain was dull but became sharper at times. Pain seemed to move about, first on one side and then the other, although it was more noticeable on the left. Never had a very big appetite. More ill when brought to hospital than at any other time during her illness. Had not been exposed to any acute infectious disease except some cases of acute tonsillitis. Had tonsillitis at two and one-half years; chicken pox at three months. Tonsillectomy two and one-half years ago. Father dead; said to have been from tuberculosis. Mother has kidney stones; pregnant six times; one stillbirth, full term, weight five to six pounds.

Patient slightly underweight. Head, eyes, ears, nose, normal. Throat normal. Neck, few palpable lymph nodes in cervical region. Chest: heart normal; slight dullness in right lower chest in axillary region with slight limitation of motion on right side; decreased breath sounds on right side; increased breath sounds over left lower chest; no râles. No masses in abdomen. Voluntary muscle spasm and rigidity, however, prevented satisfactory examination. Tenderness in lower abdomen on both sides, especially left. Voluntary muscle spasm on both sides which seemed to lessen when patient had morphin sulphate, gr. 1/20. Did not entirely disappear. Tenderness and muscle spasm over left lumbar renal region as compared with right. No definite tenderness on Murphy percussion. No fluid or distension. No asymmetry; no scars. Fat is normal. Neuromuscular examination negative. General appearance: patient appeared uncomfortable, apprehensive, breathing slightly increased but not rapid; no pain when lying quietly in bed; perspired freely. Impression: a very sick patient.

Surgical consultation: intraperitoneal signs more marked than extraperitoneal involvement. Rebound tenderness marked. Rectal examination showed mass and increased tenderness. Impression: primary peritonitis.

Urine negative; no albumin; occasional trace of sugar. Blood: hemoglobin 80 per cent; white cells 15,750; polymorphonuclears 92 per cent; lymphocytes 8 per cent. Other hemoglobin readings: August 18, 76 per cent; August 19, 66 per cent; August 22, 75 per cent; August 23, 78 per cent; September 3, 90 per cent.

X-ray August 15, negative chest. August 16, probably normal abdomen. Colon was filled with gas; moderate amount of gas in small bowel. Left psoas shadow made out quite well; right psoas shadow indistinct, but no definite sign of abnormality.

In upright position loops of bowels were not within pelvis, suggesting pelvic mass. September 2, marked distension of abdomen present. Diaphragm seemed displaced upward. Entire bowel appeared to be distended with gas, suggesting an obstruction or, more probably, a paralytic ileus and peritonitis. There was much congestion of both lungs with some suggestion of a small amount of fluid at the left base. Heart enlarged; possibility of pericardial effusion. Diagnosis: distension of abdomen; possible peritonitis; slight pleural effusion, left; possible pericardial effusion; pulmonary congestion.

Operation, August 16, 26 minutes. Anesthetic, ethylene. Operative findings: marked to moderate distension of small intestine. Bladder high. Good deal of fibrinous exudate on coils of small intestine, especially lower abdomen. Appendix normal. Drainage of peritoneal cavity with two drains low in pelvis. Appendix left alone. Extraperitoneal exploration failed to show any pus. Diagnosis: pneumococcal peritonitis. Wound closed in layers.

August 17 transfused twice with 150 c.c. and 100 c.c. of citrated blood. August 19 improved. Short chain streptococci found in culture from peritoneum. August 18, 200 c.c. of 10 per cent glucose intravenously. Condition seemed decidedly worse; irrational. Respirations shallow and rapid. Pulse rapid with fair volume. August 19, 100 c.c. of whole blood; irrational; temperature 103°. Examination of smears from vagina showed mixed organisms. August 20 intake 1,825 c.c.; output 580 c.c. August 21 transfused and 500 c.c. of saline given subcutaneously. Pulse rapid; temperature 103°. August 25 transfused again; temperature 102°; condition seemed more serious. Intake 1,400 c.c.; output 400 c.c. August 28 temperature ranged from 102° to 104°. Very toxic. Abdominal wound draining profusely; yesterday patient eviscerated. Right cubital fossa infection. Was now taking fluids well by mouth. Moist râles in base. September 2 condition about the same; worse, if anything. No signs of involvement of the lungs; chest plate taken. September 4, edema of extremities and pasty appearance. Probable secondary renal involvement. September 5, blood pressure 80/40. Temperature septic with fairly constant level, 97° to 105°. Pulse very rapid throughout. She died September 6, 2:15 A. M.

Post-mortem report. Autopsy limited to examination of the abdomen. There is a generalized fibrinopurulent peritonitis with marked distension of all the intestines. The appendix is normal and no source of the peritonitis is found.

Diagnosis. Primary peritonitis.

Comment. Primary peritonitis is not uncommon in children. In speaking of primary peritonitis we mean a peritonitis which does not develop from infection of an organ adjacent to the peritoneum. The route of infection is probably through the blood stream from the throat but is not known definitely. In most instances patients with primary peritonitis complain of sore throat a short time before the onset. This form of peritonitis sometimes appears as an epidemic among young women, particularly nurses.

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"A PATIENT LOOKS AT DOCTORS"

The November number of *Harpers* magazine contains an article, "A Patient Looks at Doctors," signed Anonymous. The fact that the committee on the costs of medical care has been formed and is at work seems to have stimulated a large number of writers to discussion of medical men and their problems. The committee on the cost of medical care consists of more than forty men and women of outstanding ability who are giving time and attention to a five year study and this committee has already intimated that the problem is so large that they can only present a large amount of material with some discussion but do not believe that they will be able to solve all of the problems their studies bring to light. Not so with the half-baked fringe of writers who are seeking a theme that will catch the public eye.

It is no wonder that articles like this are sent to the magazine anonymously, but that a magazine purporting to be a leader of thought will publish such arrests one's attention. By so doing the magazine and not the writer becomes responsible for the character of the attack.

The attack in its essentials reveals the fact that the writer, evidently a woman, afflicted with a serious illness, otitis media with a mastoid infection, called upon a physician, "Dr. Brown," who, according to her story, proved to be wholly incompetent. Dr. Brown, in a private hospital, was asked by her and her friends to call a consultant and a surgeon. "Dr. Allen," in every way competent, was called. She and her friends demanded that the consultant perform the operation and were assured by Dr. Brown that this would be done. However, they learned later that Dr. Brown had operated and that Dr. Allen had been a spectator and had not been asked by Dr. Brown to operate. On this circumstance the writer builds an indictment of the medical profession and of the ethics of medical consultation. How unjust and without proper foundation such an indictment is becomes apparent to everyone, lay and medical, who knows the facts. That members of a great profession should abuse the proper ethical principles of that profession cannot by any flight of the imagination be used as criticism of the profession itself nor of the ethics of consultation. The medical profession stands in the ban of those who attempt to correct its evils. These evils are based on selfishness, selfseeking ambition and all of those qualities which show us to be only human. Doctors

are prone to consult one with another and the ethics of medical consultation are built around the interests of the patient and the public and not of the physician. The instance this woman cites is an instance of an abuse and not of a proper use of the principles of consultation. The editors of a great magazine should be ashamed to print an anonymous communication of such a character.

SMOKE-ELIMINATING DEVICE

We learn from the *Boston Herald* that something has been accomplished toward the elimination of smoke by electricity. Scientists of the General Electric Company explain that experiments for the past year have proved that the apparatus will change the blackest smoke into a harmless, invisible vapor. The only unsolved problem is to manufacture the device cheaply enough to bring them into general use.

The smoke eliminator is made to fit into a chimney and consists of several metal plates charged with a high voltage direct electric current which may be obtained from an ordinary light socket.

Half of the plates will be charged positively and the other half negatively, the latter will repel the grimy smoke particles and the positive plates will attract them. Smoke passing through the chimney, therefore, will be cleansed of its particles as it passes the plates.

Arthur F. Diggs, inventor of the device and chief engineer of General Electric Company, said he believed it was a solution to the problem which the scientists of many cities have sought to solve.

The practicability of this invention remains to be seen, but we at least welcome it as a step toward the solving of the smoke menace in large cities.

TAXES AND HOSPITALS

From some clippings gathered during the past months, we are able to set out a few facts in regard to the taxation of hospital property. Any hospital run for profit is subject to taxation; but hospitals that are not run for profit, or hospitals endowed by wills, are less likely to be troubled by taxation problems.

For instance, Miller Hospital, St. Paul, and many others backed by religious bodies or other organizations but not operated for profit, are free from taxation.

There are three classifications. The first is

the privately owned hospital, one that is owned and operated by private individuals as a group of doctors, who operate for profits which are divided among the owners. This kind might be subject to taxation, though not necessarily.

Second, the public hospital owned by a municipality or state is not subject to taxation. This applies to the general hospitals of large cities and a few smaller ones operated in the country places for the same purposes.

The third class is that which includes most institutions and is that kind that is endowed. They are not operated for profit, but if a profit should accrue it would go toward the endowment fund and not be divided as profit. This fund maintains rooms or beds that are open to certain classes of people unable to pay the usual fee for care. This is something rather difficult to explain to the public at times. They think of a hospital as nothing different from a boarding house; but a hospital is subject to many limitations and restrictions that do not affect a privately conducted business.

For instance, at Miller Hospital there are maintained fifty free beds. The daily per capita for patients is about \$5.85; still they maintain a number of beds at \$3 and \$5 per day. For every applicant who is accepted for these beds there is a deficit which is met by a fund accrued from profits. Doubtless there are times when the patient who has the means to pay avails himself of this situation, and crowds out the needy patient who might justly use the free space. There is perhaps no way of equalizing it all to the satisfaction of everybody, but it does no harm at times to explain to the patient why hospital rates are what they are. The time may come when some general and more definite decision is made regarding the class of hospitals that should be taxed. For instance, the man who owns a private hospital sometimes struggles a long time for an existence and makes nothing, but he has the satisfaction of having a place to keep his patients, and in the end succeeds in some degree, and he is subject to taxation.

With the present low ebb of business conditions, more and more people are applying for free hospitalization by bringing pressure to bear in one way or another. What is to be done? Having a committee to pass on the case all makes for delay, but wholesale free hospitalization is not the solution either. Hospitals, as a rule, are big-hearted but they cannot build nor maintain hospitals without funds and an income. All help

at hospitals is paid help. Perhaps if our patients understand this fully they would be less likely to apply for free care without a second thought.

Last summer the state tax commission announced its policy after denying the application of a prominent hospital for tax exemption. An opinion handed down by the attorney general's office was that a hospital to be exempt from taxes, must either be a "public hospital" or an "institution of purely public charity." The case was appealed, the appeal being based on the constitutional amendment of November 6, 1926, which placed public hospitals on the same tax-exempt basis as public burial grounds and educational institutions.

DR. W. B. HOLMES, ADA, MINN., DIES

The newspapers tell us that Dr. Holmes was found dead in his home at Ada, Minn., the result of a heart attack. As we have known Dr. Holmes long and well we thought a eulogy was quite in order. He had been at Ada for more than thirty years and had built up an extensive practice by his faithful service to his patrons. He had also served as president to their Community Club at one time.

We knew Dr. Holmes in his student days and looked upon him then as a particularly bright fellow; he stood very high in his classes and was well thought of by his fellow-students and the faculty. We feel a certain regret at the passing of one of Dr. Holmes' ability and standing. The fact that he won the admiration of those around him, no matter in what community, speaks for itself; and we believe that the medical profession has lost a man of real worth.

BOOK NOTICES

GONOCOCCAL INFECTION IN THE MALE. By Abr. L. Wolbarst, M.D. Second edition, completely revised and enlarged, 297 pages, with 144 illustrations, including seven color plates. St. Louis: C. V. Mosby Co., 1930.

It is the aim of this book to record the advance of the knowledge of diagnosis and treatment of male gonorrhoea and its complications in such a manner as to offer the general practitioner a working familiarity with the present day diagnostic methods and treatment.

The material in this book is based largely on the personal experience of the author. The second edition represents a revision of the first edition (1927), improved by the addition of new matter and useful illustrations, the most useful part being the incorporation of the personal conviction of the author that gonorrhoea must be considered a constitutional disease; the author has therefore elaborated the section dealing with constitutional therapy.

Most of the chapters have been rewritten, either completely or in large part; the revision has been done with the single thought in view, however, of clarifying what seemed to be obscure, eliminating what could be dispensed with, and adding what is new, without in the least degree sacrificing that upon which time has placed its stamp of approval.

I do not recall the price of the book, but it is a valuable addition to the library of a general practitioner no matter what the price may be. Dr. Wolbarst's book is highly recommended.

—H. MARK, M.D.

THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. Vol 21, 1929. Philadelphia: W. B. Saunders Co., 1930. Cloth, \$13.00 net.

In reviewing the 1929 volume of "Collected Papers" of the Mayo Clinic and Foundation, there is very little to be said. They cover practically the entire field of medicine, and not only give the original work of men at the clinic, but also a complete résumé of the literature on the different subjects.

The papers as a whole are brief, and a good many of them are abridged so that you get the gist of the papers without reading pages of minute details, which if you are interested, can be obtained in the complete papers.

—ADAM M. SMITH, M.D.

"SURGICAL AND MEDICAL GYNECOLOGIC TECHNIC." By Thomas H. Cherry, M.D., F.A.C.S. Published by F. A. Davis Co., Philadelphia, 1929. Price \$8.00 net.

It is a pleasure to review a book of this character. This book is not intended as a text book, but is intended to aid the practitioner of medicine, who is constantly coming in contact with Gynecological patients, in applying proper modern methods of diagnosis and therapy, and also is intended to help the surgeon to select proper standard operative procedure for those patients requiring surgical intervention.

The descriptions and illustrations are splendid. Most of the illustrations are original drawings by the author, and he may well be proud of them. It is always a delight to get away from the stereotyped book on Gynecology, which differs from every other book in little or nothing but the name of the author. It is always refreshing to read a book that is not dedicated to the proposition that the reader has never read anything in his life, and thus must be given, in every instance, an outline of the history beginning with Adam and Eve, working up through Hippocrates and Galen, etc., with references to everything that has ever been written on the subject. We need more books of the personal experi-

ence variety, such as this book. It gives one a new slant on the subject that is stimulating.

This book by Dr. Cherry is excellent and would constitute a worthy addition to any medical library.

—RAE T. LAVAKE, M.D.

NEWS ITEMS

Dr. N. J. Barnes, Aneta, N. D., has moved to Rolla, and becomes a partner of Dr. B. D. Verrett of that city.

Dr. W. A. Meilicke, Nicollet, Minn., has disposed of his practice to Dr. H. M. Larson, and will locate at St. Paul.

Dr. W. P. Robertson, Litchfield, Minn., son of one of the pioneer physicians of the state, died recently in that city.

Dr. E. G. Barnett, St. Paul, is now associated with Dr. W. H. Valentine, Tracy, Minn., in the general practice of medicine.

Dr. E. O. Church, formerly located at Big Stone City, S. D., has moved to Watertown and will continue general practice.

Dr. A. J. Chesley, secretary of the Minnesota Public Health Department, is president of the American Health Association.

Dr. J. N. Shields, who for many years was in active practice at Wahpeton, N. D., died recently at San Luis Obispo, Calif.

Dr. C. D'A. Wright, Minneapolis, was in New York this month attending a meeting of the American Railway Surgical Association.

Dr. David N. Jones, for many years active in the practice of his profession in Minneapolis, died recently at his home in Long Beach, Calif.

The new \$250,000 St. Mary's Hospital at Pierre, S. D., was dedicated this month, with Rev. B. J. Mahoney, bishop of Sioux Falls, officiating.

Dr. Franklin R. Wright, Minneapolis, attended the urological meeting at Chicago last month. Dr. Wright also spent a few days at Indianapolis.

Dr. and Mrs. E. J. Huenekens, Minneapolis, are home from a three months' trip to Europe. They visited many of the leading countries on the continent.

The sale of the Aberdeen Clinic by the B. C. Murdy estate to Dr. Hamlin Mattson and Dr. H. R. Mahorner of Rochester, Minn., was recently announced.

The Devils Lake District Medical Society held their quarterly meeting at Devils Lake last month, with Dr. W. E. G. Lancaster, Fargo, the main speaker.

A new hospital was dedicated at Alexandria, Minn., this month. It has a capacity of forty beds, is thoroughly fireproof, and has every modern convenience.

Dr. W. B. Holmes, Ada, Minn., died suddenly of heart trouble. Dr. Holmes had been in active practice of medicine in that county for more than thirty years.

Over 100 nurses were successful in passing examination before the North Dakota state board of examiners at the meetings held at Fargo and Bismarck last month.

Dr. L. J. Bowman, Hope, N. D., who was formerly located at Ada, Minn., has returned to that place to succeed the late Dr. W. B. Holmes in the general practice of medicine.

Dr. and Mrs. Emil S. Geist, Minneapolis, have returned from a five weeks' trip to Paris, France, where Dr. Geist attended a meeting of the International Orthopedic Society.

Dr. C. F. Crain, one of the leading physicians of Redfield, S. D., has moved to Galveston, Texas, where he has accepted a fellowship in the University School of Medicine, as X-ray specialist.

Dr. D. Lemieux, Bowman, N. D., who has been in active practice in that city for the past eight years, has moved to New England, N. D., where he has purchased the practice of Dr. S. Moske.

Dr. J. C. Ohlmacher, Vermillion, S. D., director of the State Health Laboratory, attended the annual meeting of the American Public Health Association held at Fort Worth, Texas, in October.

Dr. Paul M. Fesler, superintendent of the University of Minnesota hospital at Minneapolis, was elected president of the American Hospital Association, at the annual meeting held at New Orleans last month.

The members of the Traill and Steele Counties, N. D., Medical Society are holding regular monthly meetings with a good attendance. Dr. A. A. Kjelland, Hatton, is president, and Dr. S. Vinge, Hillsboro, secretary.

Dr. Arthur Dean Bevan, head of the surgery department of Rush Medical School, Chicago, was named president-elect of the Inter-State Postgraduate Medical Association for 1932. He will succeed Dr. Henry Christian, of Harvard University.

Dr. T. J. Murray, pioneer Butte, Mont., physician and founder of the Murray Hospital, of that city, is reported to be critically ill at his home. He has been in ill health for many months and for the last several weeks has been unable to leave his bed.

Dr. J. Woolway, well known physician of northern Minnesota, died at a local hospital in Duluth recently. Dr. Woolway, from 1910 to 1916, was superintendent of the St. Louis County Hospital and served as superintendent of the Deerwood, Minn., sanatorium from 1920 to 1923.

Dr. Morris Fishbein, Chicago, editor of the *Journal of the American Medical Association*, was the principal speaker at the annual dinner of the Minnesota Public Health Association at their annual meeting last month at Minneapolis. Public health workers from all parts of the state were present.

Dr. Justus Ohage was honored as the first man to perform the operation removing gallstones at the recent international medical assembly of the Interstate Postgraduate Medical Association of North America, at Minneapolis. He was given an ovation when presented to the 2,000 delegates in the auditorium.

The first fall meeting of the Watertown, S. D., Medical Society was held in that city last month, about forty members being present. Drs. W. A. Fansler, and F. C. Rodda, Minneapolis, presented interesting papers. Dr. P. D. Peabody, president, and Dr. J. F. D. Cook, secretary, of the State Medical Association, attended the meeting.

Nearly 150 graduates of the University of Minnesota School of Medicine attended the annual dinner of their alumni association at Minneapolis last month. Guests of honor were Dr.

H. M. Johnson of Dawson, and Dr. L. L. Sogge of Windom, Minn., past presidents of the association. Dr. N. O. Pearce, Minneapolis, president, was toastmaster.

Dr. J. A. Myers, Minneapolis, was reelected president of the Minneapolis Public Health Association at its annual meeting held in that city last month. Other officers elected were: Mrs. P. F. Murphy, Stillwater, secretary; Dr. O. E. Locken, Crookston, first vice president; Dr. W. S. Broker, Battle Lake, second vice president; W. A. Laidlaw, St. Paul, treasurer, and Dr. E. A. Meyerding, St. Paul, executive secretary.

A fund has been presented to Northwestern Hospital, Minneapolis, as a memorial to the late Dr. Arthur Ayer Law by his wife and daughters for the equipment and maintenance of the operating room in which the doctor worked during his years on the hospital staff. A gas machine and an operating table of the most approved type have been installed, and a bronze memorial plate has been placed in the wall to designate the room.

At a dinner meeting of the Medical Assembly, a recently organized group of younger physicians in St. Paul representing the specialties, the following officers for the year were installed: Dr. Gordon R. Kamman, president; Dr. Richard B. Hullsiek, vice-president; Dr. James J. Swendson, secretary-treasurer. Drs. Joseph E. Borg and Richard B. Hullsiek addressed the society on "The Use of Potassium Sulphocyanate in Hypertension" and "Hematuria as a Symptom."

The Minnesota Academy of Medicine held their monthly meeting this week and the following program was presented, after the regular dinner being served at the Town and Country Club, St. Paul. "Observations On Serotherapy In Scarlet Fever," by Dr. Alexander Stewart. "Neurological Aspect of Head Injuries," by Dr. William H. Hengstler. Case Reports: 1. A Case of Prenatal Sarcoma. 2. A Transplant of the Female Breast. By Dr. H. P. Ritchie.

The regular monthly meeting of the Northwest District Medical Society was held at Minot, N. D., and brought out an exceptionally large attendance. A large number of members from outside of Minot were present for the program. A dinner was served at 6:15 p. m., and a speaking program followed, with several members discussing topics of interest to the profes-

sion. In his capacity as president of the society, Dr. M. J. Fardy, Minot, presided at the dinner and speaking program.

The Minnesota State Medical Association broadcasts weekly at 11:15 o'clock every Wednesday morning over Station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters). Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. The program for the month of December will be as follows: December 3rd., Gall Stones; December 10th, Mental Hygiene; December 17th, Christmas Seal; December 24th, Aseptic Surgery; December 31st, Cancer of the Skin.

Dr. N. O. Pearce, Minneapolis, was elected president of the Minnesota Medical Alumni Association at their annual meeting in Minneapolis. Other officers are Dr. Harry P. Ritchie, St. Paul, first vice president; Dr. Claude J. Ehrenberg, Minneapolis, second vice president; Dr. Donald H. Daniels, Minneapolis, treasurer, and Dr. Ralph H. Creighton, Minneapolis, secretary. Members of the executive committee are Dr. J. Frank Corbett, Minneapolis; Dr. William F. Braasch, Rochester; Dr. J. C. Hultkranz, St. Paul; Dr. E. L. Tuohy, Duluth; Dr. James B. Carey, Dr. Earl A. Loomis, Dr. Douglas P. Head and Dr. Oswald S. Wyatt, all of Minneapolis.

A meeting of the West Central Medical Society of Minnesota was recently held at Wheaton, with many doctors and their wives in attendance. Following the banquet the officers for the coming year were elected as follows: Dr. E. A. Eberlin, Glenwood, president; Dr. E. T. Fitzgerald, Morris, vice president; and Dr. A. L. Lindberg, Wheaton, secretary-treasurer. After the business session interesting papers were read by several of the doctors. Dr. Scofield, of Benson, gave a short talk. He also extended an invitation to the members of the West Central division to attend the next meeting of the Swift-Kandiyohi Division of the Minnesota State Medical Association.

ACUTE TUBERCULOUS IRITIS

F. H. VERHOEFF, Boston (*Journal A. M. A.*, Aug. 23, 1930), relates the case of a man, aged 64, with retinitis pigmentosa, blind for more than twenty years,

who developed in one eye acute fibrinous iritis clinically similar to acute "rheumatic" iritis. Roentgen examination of the chest showed marked evidences of old pulmonary tuberculosis. There was no cough or elevation of temperature. On account of pain the eye was removed about five days after the onset of the subjective symptoms. Microscopic examination showed small recent tuberculous foci in the iris which had given rise to a fibrinous exudate in the pupil. The acute reaction may have been due to an allergic condition of the patient toward tuberculous toxins. Since the case does not conform to any type of tuberculous iritis hitherto recognized, it suggests that some, possibly many, cases of supposed "rheumatic" iritis are due to tuberculosis.

ECONOMIC RESULTS OF MODERN TREATMENT OF DIABETES

DR. BYRON D. BOWEN, Buffalo (*Journal A. M. A.*, Aug. 23, 1930), analyzes the status of eight-one patients treated with insulin compared with their prediabetic condition. Fifty-two of the adults have been receiving insulin for at least four years, many of them for seven years. Of the twelve children, the average period of treatment is three years. Forty-eight of the sixty-nine adults stated that they felt as well as before the inception of the diabetes, and nine volunteered the information that they felt better. Of the remaining twelve who did not feel as well, three developed diabetes in childhood, one was going through the menopause, one was 65 years of age, three had not been given insulin until late in the disease, and three others had great difficulty in adapting themselves to the life of a diabetic patient. Forty-three said that they could not exert themselves physically as they formerly could without fatigue. Many of them remarked, however, that they could do as much as ever for a short time. Many experienced insulin reaction during exercise. Twenty-six were convinced that they could do as much work as ever and that they experienced no fatigue; all of these led fairly active lives and two of them were farmers. Fifty-four believed that they could do as accurate, sustained and concentrated mental work as ever, while thirteen felt this function had been depressed. Many commented that they felt a disturbance of mental acuity only during insulin reactions. Twenty-one of these patients were housewives or did housework, ten were students, six were school teachers, ten did hard manual labor, while nineteen others had sedentary occupations: clerks, salesmen and business men. Of these sixty-six, ten found it necessary to give up their former occupation, but five of them had suffered the maximum devastation of diabetes before insulin. All of the housewives were able to carry on their former work without additional help. All of the twelve children as reported by the parents are able to keep up with their playmates without fatigue; they apparently lead active childhood lives and are growing normally. As a class these children do remarkably well in school.

MISCELLANY

Unlicensed Doctor Enters Plea of Guilty

On October 9, 1930, J. E. Dufort, of Northome, Minn., entered a plea of guilty before the Honorable Judge Wright, of International Falls. The defendant was charged with practicing medicine without a license. Dufort has been located at Northome for the past twenty years and has never possessed a license to practice medicine in this state or elsewhere. He was arrested in 1928, charged with violating the Basic Science Law. He continued to violate the law with the result that in June, 1930, he was again arrested for the same offense. The Court sentenced Dufort to a term of one year in the county jail and to pay a fine of one hundred dollars. The Court suspended the sentence on the following conditions:

1. The defendant must leave the county.
2. The defendant must refrain from practicing healing in any way, shape or manner irrespective of whether a fee is charged or not.
3. The defendant must not be charged with violation of any other statute of this state.
4. The defendant must report once every ninety days in writing to the Judge of the District Court, giving his occupation and present place of residence.

Dufort was very fortunate in escaping a jail sentence because of his previous good fortune before the Court. A number of citizens from Northome interceded for Dufort but they were warned by the Court not to interfere in this matter again. The defendant was not licensed and apparently had no chance of getting a license and will be placed in the county jail for the slightest infraction of the law.

Minnesota Radiological Society

A meeting of the Minnesota Radiological Society was held at the University Hospital, Minneapolis, Minn., on October 25, 1930. The following program was presented:

- Roentgen Studies on the Onset of Lobar Pneumonia.
Walter H. Ude, M.D., Minneapolis.
Discussed by George E. Fahr, M.D., Minneapolis.
- Childhood Tuberculosis.
Malcolm B. Hanson, M.D., Minneapolis.
Discussed by Jay A. Myers, M.D., Minneapolis.
- Lympho-Epithelioma.
A. U. Des Jardins, M.D., Rochester.
- Air Injection in the Diagnosis of Lesions of the Colon.
Harry M. Weber, M.D., Rochester.
- Roentgen Therapy in Carcinomatous Metastases to Bone.
K. W. Stenstrom, Ph.D., and L. G. Erickson, M.D.

An informal dinner was held at the Town and Country Club, Dr. W. A. O'Brien acting as toastmaster. The Society was honored by the presence of two distinguished guests, Dr. James L. Martin, of Dallas, Texas, and Dr. Bernard H. Nichols, of

Cleveland, Ohio. The following papers were presented:

- Significance of Small Intestinal Gas in the Diagnosis of Bowel Obstruction.
Edward Schons, M.D., St. Paul.
- Clinical and Experimental Studies on Intestinal Obstruction.
Owen H. Wangensteen, M.D., Minneapolis.
- Intravenous Urography.
Bernard H. Nichols, M.D., Cleveland, Ohio.

At the business meeting new officers were elected for the coming year as follows: Dr. B. H. Kirklin, Rochester, President; Dr. Gage Clement, Duluth, Vice President; and Dr. Leo G. Rigler, Minneapolis, Secretary-treasurer.

The time and place of the next meeting will be decided by the Executive Committee at an early date.

LEO G. RIGLER, M.D., Secretary

Unlicensed Healer Meets Defeat in Supreme Court

In December, 1929, A. H. Broden, an unlicensed healer was arrested at Duluth, Minn., and charged with practicing healing without a Basic Science Certificate. Following his arrest, Broden interposed a demurrer to the information on the ground that the law was unconstitutional. The Honorable C. R. Magney, Judge of the District Court for St. Louis County, certified the constitutionality of the Basic Science Law to the Supreme Court for a decision. On October 10, 1930, a very extensive opinion written by the Honorable Andrew Holt, Associate Justice of the Supreme Court, was handed down upholding the constitutionality of the law not only under the constitution of this State but of the United States as well. The case was argued in the Supreme Court by Mr. Brist on behalf of the State Board of Medical Examiners. This is the first time in the United States that a state Supreme Court has passed on the validity of a Basic Science Law. The opinion of the Supreme Court shows a very careful consideration of the law and the questions presented. The handing down of this decision means not only that the Basic Science Law is a valid enactment of the Legislature but that the defendant Broden will have to stand trial on the charges preferred against him.

CLASSIFIED ADVERTISEMENTS

Graduate Nurse at Liberty

Graduate nurse wishes position as doctors office assistant. Call South 6579.

Position Wanted

Position wanted by expert x-ray technician. Good references. Address 764, care of this office.

For Sale

Instrument cabinet and operating table for sale very reasonable. Address 761, care of this office.

Practice for Sale

Practice and medical library of the late Dr. T. B. Smiley, of Mt. Vernon, S. D. Address Mrs. T. B. Smiley, Mt. Vernon, S. D.

Graduate Technician

Graduate technician would like position in hospital, laboratory or clinic. Conscientious worker. Address 771, care of this office.

Technician at Liberty

X-ray technician, with two years clinic experience, wishes position in hospital, clinic or doctor's office. Good references. Address 756, care of this office.

Locum Tenens Wanted

To take over lucrative unopposed general practice in Eastern South Dakota, for several months. Privilege of buying later. Address 769, care of this office.

Locum Tenens

Would like to take over practice in Minnesota, while owner is on vacation or rest. Willing to consider 50-50 on income. Eleven years experience. Scandinavian. Address 773, care of this office.

Experienced Technician

Capable young woman (28 years) wishes position as technician. Three and one-half years laboratory, x-ray, physiotherapy and general office experience. Two years clinical training. Very best references. Address 774, care of this office.

For Sale

Office and equipment, located at Lake Street and Hennepin, Minneapolis. Four room office suite, well equipped. Reason for selling, leaving city. Good price for cash deal. Dr. John C. Kock, telephone Kenwood 3958.

Practice for Sale

\$15,000 cash practice for sale. City of 5,000 located in Western Minnesota. This practice can be purchased by buying part or all office equipment. No real estate. Reason for selling, locating on West Coast. For further information address 770, care of this office.

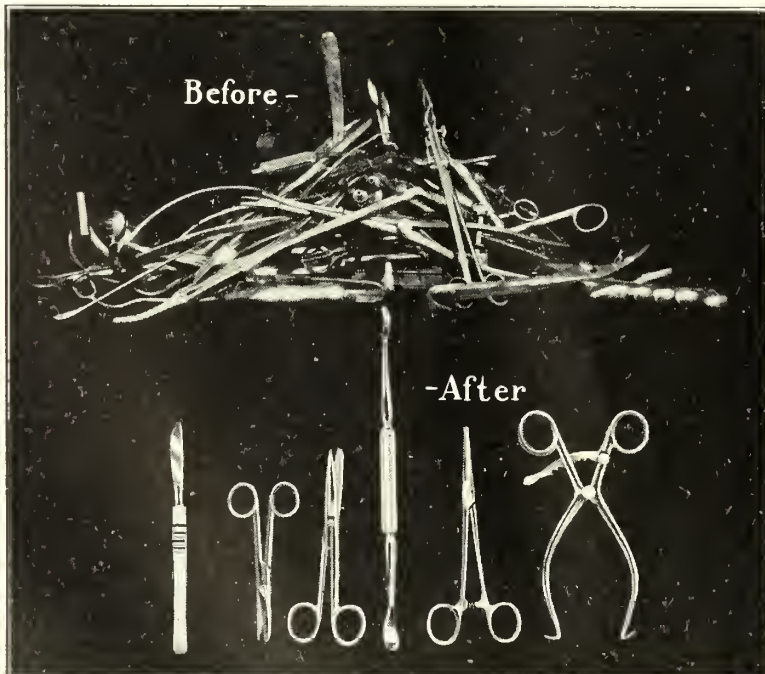
Opening for General Practitioner

Experienced physician wanted in town located in Douglas County, Minnesota, lake region territory. No opposition, large territory, good roads, schools and churches. Rich dairy community. Collections A No. 1. Former physician moved on account of ill health. For further information address 765, care of this office.

For Sale

Tice's loose leaf Practice of Medicine at \$50.00. Lewis' loose leaf Practice of Surgery, \$50.00. Both sets new, complete and up to date with three fold service on both. Heidbrink portable gas-oxygen machine worth \$165.00, plus four cylinders of gas worth \$24.00, all for \$100.00. Address Dr. A. E. Arneson, Starbuck, Minn.

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A PEDIATRIC CLINIC*

By J. R. GERSTLEY, M.D.

CHICAGO, ILLINOIS

Mr. Chairman and Members of the South Dakota Medical Association: I thought, in holding a clinic before you, I would do just exactly as if I were in my own office. The first thing one does when he is in his own office is to be comfortable. I take off my coat and roll up my sleeves. It makes a good impression upon the mother if you wash your hands. This is just a part of the regular office routine.

I brought along the bag which I use in my daily work. The first and most important implement that a pediatrician takes from his bag is a package of chocolates. This is our most important contribution to the practice of medicine. These chocolates come from two chocolate trees. We have a chocolate tree in California and a chocolate tree in Switzerland. These two chocolate trees cure more children than all the rest of the pharmacopeia put together. So much for the first to come from the bag.

Secondly comes the book of notes in which we record the weights and examinations of the last visits. The modern practice of pediatrics consists of examining children at least every month. You must keep in touch with your chil-

dren. You must see them once a month, and you must stay in touch with the family over the telephone, because if you don't, your babies will go backward.

If there is anything that modern pediatrics has done to advance medicine, it is to encourage the mothers and the physicians to have the babies examined once a month. So much then for the word of introduction.

I believe Dr. Zimmerman has the first patient.

DR. W. E. DONAHOE: Dr. Zimmerman will talk to you after a while. This happens to be a baby I saw. This baby is ten months old. At five months it was a well, perfectly good breast fed baby, well developed and normal. Then it developed a temperature of 106°, was sick for about a week, developed convulsions, and after having convulsions for about a week came into the hospital in a general flaccid condition with a spasticity, I think, of both arms and a leg, and that gradually cleared up.

The baby was here for about three months; had negative spinal fluid, was a flaccid baby all the time it was here, like a cloth or rag. The temperature came down to normal. It developed an acute otitis on two different oc-

*Presented at the meeting of the South Dakota State Medical Association, at Sioux Falls, S. D., May 21, 22, 1930.

casions and caught the measles. We didn't have any measles, but after it was here about two and one half months it caught the measles I suppose from some of the company. As soon as the measles cleared up we sent it home. I have not seen it since it went home.

After it went home they got one of the new sun lamps. It came in with pretty good color to what it had.

It was taken suddenly sick; high temperature; convulsions, and when it came in two weeks after its first sick spell we found a pneumonia which cleared up and left it in this flaccid condition. It could not raise a hand or anything.

DR. GERSTLEY: In examining this youngster we have to consider a number of things. The most likely cause of convulsions in infants is the onset of acute contagious disease, pneumonia, scarlet fever, measles, any of the acute contagious diseases.

Another very common cause of convulsions and one which is often overlooked is the condition known as tetany, not tetanus but tetany, which is a disease associated with rickets. So the next thing, after ruling out acute contagious disease, is to look for evidences of rickets. The most common evidence is, of course, softness of the bones back of the ears, so-called craniotabas.

The next thing is to feel the bones of the chest and see if there is enlargement. I do feel a very slight enlargement of the ribs here; so the child has a very mild degree of rickets.

If the child has rickets, the next question is, is the child in a stage of spasmophilia? Is the child likely to have convulsions? There are a number of tests. The most accurate is to measure the child electrically, but there are a number of rough clinical tests. One is to tap the baby in front of the ear where the facial nerve emerges. If there is increased mechanical excitability, and you get a twitching of the muscles innervated by that nerve, you have the so-called Chvostek sign. It is a rather unreliable sign because the baby rarely holds his facial muscles quiet. More reliable and easier to demonstrate is to tap the perineal nerve where it emerges under the head of the tibia. If the test is positive you get a jerking of the foot. These are rough clinical tests. The more accurate test is to measure the baby electrically.

These two rough clinical tests are negative, so in the absence of electrical reaction we rule

out the state of spasmophilia which is a condition associated with rickets.

Another disease which we must differentiate in children is meningitis. Of course, that goes with the acute contagious diseases. I want to call your attention to one test that is often overlooked and often not done correctly, and that is the Brudzinski sign. I had charge of the epidemics in Coblenz, and of all the tests the Brudzinski was the most reliable. That consists of flexing the head upon the body. If the Brudzinski is positive, the legs come up. The test here shows nothing very definite. At any rate he doesn't work very strenuously against it. It is doubtful, the suggestion of a slight irritation.

I want to show you how to do a Brudzinski, because it is often done incorrectly. It consists of flexing the head. In a meningitis the neck is often rigid, and one making a test often lifts up the head. He often takes the head like this and raises it up. If the neck is rigid, that does not flex the head on the chest. You must hold the body stiff and then flex the head on the body. That is the Brudzinski, and it is the most valuable test for meningitis that I know of from my own experience.

Of course acute meningitis is ruled out. There may be chronic meningitis. We think also of encephalitis and poliomyelitis. We will see how the reflexes are, if we can get them—not very brisk.

My impression of this child, inasmuch as the spinal fluid is now negative, inasmuch as the eye grounds are negative and in the absence of other findings, is that this child probably had a poliomyelitis or slight encephalitis. But the baby seems to be doing very well, and I imagine in this case the prognosis is rather good. We should not let this go without making some test of the child's mentality, the child's development. The child is obviously past the newborn stage, but we test the reaction of a three months' old child. It holds the head up. That is the reaction of about a three months' old child. It is not overly well. At six months a baby should sit up. So there is considerable mental retardation. At six weeks the baby should follow a light. It makes an effort at following it, so he has the reaction of a six weeks' old baby but questionably that of one of three months. I think on superficial examination to say he had a poliomyelitis or encephalitis is probably a fairly accurate diagnosis.

DR. DONAHOE: This case probably illustrates an important thing, and that is vomiting. This baby when it was two weeks old was brought in. We know nothing about the history of delivery or anything else. Some Sioux Valley man brought it in from Iowa and left it at the hospital. It is now two and one half weeks old. It was put on modified cow's milk, skimmed cow's milk mixture, which it has vomited and it has continued to vomit. It weighed seven pounds and four ounces and went down to six pounds and fifteen ounces. About five days ago it was put on a thick cereal feeding with normal saline subcutaneously and is gaining and is not vomiting.

DR. GERSTLEY: Baby found on the doorsteps of some place, brought in for vomiting. This brings up the question of infant feeding. Infant feeding is only part of the general question of infant nutrition. We never want to prescribe any mixture for a baby unless we have some idea of the baby's general nutrition. For that reason, just as a matter of routine, we would measure the baby and see how long it is. The baby is twenty inches long. That is plenty long enough.

Then we feel the general nutrition of the child. The index is the skin. The skin is perhaps the best index of all as regards the baby's nutrition. This skin can be picked up in folds, so the baby is not 100 per cent well nourished. We would want to know the baby's weight which we haven't here. Then as part of the routine examination we never overlook the heart, because a congenital heart is one of the common causes of disturbance of nutrition.

The heart sounds seem perfectly clear. Is this a case, then, of pyloric stenosis or pyloric spasm? The chances are that it is not, because true pyloric stenosis or true pyloric spasm usually develops after the second or third week. During the first week or two you find vomiting not at all uncommon in either breast fed or artificially fed babies. I don't know the explanation. I am inclined to attribute it to some incoördination between the stomach and the intestines.

If you only can get these babies to gain in weight,—it does not make any difference how you get them to gain in weight, it does not make any difference how often they vomit,—they will get well. Just pay more attention to the weight curve than anything else, and these children will get over it. I have found that small feedings frequently repeated are the most efficient meth-

od of treatment. If the baby is breast fed, have the breast milk expressed and order ten feedings of one half ounce each. Those feedings should be given, we will say, at 6, 8, 10, 12, 2, 4, 6, and so on, every two hours, perhaps starting in with one half ounce and running up to three quarters of an ounce, and so on.

If you just adjust your feedings so they gain a little in weight at the end of two weeks, or ten days to two weeks, they usually will start going up pretty rapidly, and with that the vomiting will stop.

The true pyloric stenosis or spasm is most likely to develop after the second week of age. I am usually inclined to be optimistic. It does not make much difference what you feed the babies. Thick cereal is perfectly all right. If the baby gains, he will get well. If you give him milk mixture and he gains on that, he will get well. The only objection I have to thick cereal at this age is that the baby cannot digest the starch. Other than that it is all right if he gains.

There is another thing to look out for with thick cereal, and that is that it is made with milk, and when you dilute it down and give the baby a small amount, it is only getting a small amount of milk. If you keep it up for a certain length of time then the baby is going to suffer from starvation from insufficient milk, because you are giving a lot of cereal and not a great deal of milk. Another thing to look out for, is not getting enough mineral matter.

In this case I think I would start the baby on a regular artificial feeding. A regular artificial feeding for a baby of this age would be milk and water, equal parts, plus five per cent carbohydrate. Many a man in feeding a newborn baby does not give enough carbohydrate. He does not give enough calories, and newborn babies are lost, many of them, just on that account. More frequently we find a newborn baby requires a lot of food. Even if he has diarrhea give him a mixture that will keep him alive. That mixture, we found in our own experience, is usually about one half milk and water with five per cent carbohydrate. It does not matter which one you use.

The prognosis here is that on small amounts of this mixture or thick cereal or any other mixture you want to use, the baby will start gaining.

Answering the question how to make this mixture, I figure the total a newborn baby would take is fifteen ounces of breast milk. Breast

milk is my guide. Therefore, I would write a formula, milk eight ounces, water eight ounces, which is a total of sixteen, five per cent of sixteen ounces or six drams of carbohydrate. I would take milk, water and lactose, or whatever you want to use, and boil it one minute because that makes it easier to digest.

DR. GOLDIE ZIMMERMAN: This patient is aged eight and one half months; birth weight seven pounds and fourteen ounces; first child; breastfed for three weeks, then it was put on Eagle Brand condensed milk for three months. A rash appeared. The mother then consulted the family physician who took it off Eagle Brand condensed milk and put it on a modified whole milk mixture. There was no improvement in the rash. It was then put on the modified skimmed milk feeding. The rash seemed to improve somewhat and disappeared, and generally there was some improvement.

At five months of age the mother noticed an enlargement in the left axilla about the size of a walnut. There seemed to be no pain on pressure in this area. She then again consulted her physician. This was watched, and it seemed to enlarge somewhat for about a month, and then remained about the same size. At that time the physician put the needle in but found no fluid or anything. It seemed to cause no discomfort to the patient and apparently has not enlarged, the mother states, for at least a month.

The baby was then given various cereal feedings, put on cereal, vegetable, fruit juices and barley water, and the milk was omitted. At five months of age it had two teeth; stools were loose; the appetite seemed good; seemed to be quite distressed on account of the itching skin. There seemed to be very little improvement in the skin. It was then given some light treatments, not so very many, and the mother thinks she noticed a slight improvement at that time.

DR. GERSTLEY: In this baby we have a combination of things. Here is a typical diffuse infantile eczema. That is one; that is enough for the average pediatrician. Then we have quite a growth here which is something entirely different.

First, as regards the eczema. Eczema is a condition on which volumes have been written and none of us know very much about it. All sorts of treatment have been recommended, and there is no treatment that is absolutely specific. My own ideas of eczema are these: Inasmuch as we don't know the cause of most eczemas, we

are reasonably sure that diet is not as important as we used to think. When I was a student, protein was blamed, fat was blamed; this thing, that thing and the other thing. I think we have gotten away from that with the exception, maybe, of protein sensitivity. But other than that we don't believe that diet has a great deal to do with eczema.

Under these circumstances, my idea is to feed the babies and get them in as good a nutritional condition as possible, because, after all, the skin must be nourished as well as the rest of the body. If you don't know the cause of the disease, at any rate that is no reason for not having your skin and the rest of the body well nourished. So eczema or no eczema, I put the youngsters on an absolutely full diet. You will find when you put the baby on a full diet and he begins to gain in weight and the tissues swell up, often the eczema gets worse because the tissues get full of fluid. If you stick to it, in a while the baby will establish a balance and then get better. I have seen lots of cases of eczema get better just by full diet.

There are other means of treating eczema. Of the local applications the most efficacious is true coal tar; just smearing it on. That relieves the itching and does a lot of good. Some men think the good is due to the phenol that is in it. At any rate that does more good than any other treatment I know of.

Then it seems to me these children do seem to get better on sunlight. Where the artificial sunlight develops a certain pigment, they do seem to get better. So I prescribe for the child coal tar, out-of-doors, sunlight, and ultraviolet light.

One should say a word about protein sensitization. Some men have thought the baby may be sensitive to eggs. If the mother is nursing the baby they test the mother and find whether she is sensitive to eggs; if she is, the eggs might be the cause of the eczema in the child, and so on. I don't believe that has been proven. I think we are getting away from that a little bit. There may be some cases, but my own idea is that eczema is a dermatitis, an irritation of the skin of some unknown cause rather than anything else.

In mild cases, if you put on cold cream you will get good results, just ordinary cold cream to protect the skin. In severe cases use the crude coal tar. I do believe sunshine does do a lot of good. So much for the eczema.

I don't know what this lump is. This is a

pretty large tumor. It feels fairly solid. I think Dr. Goldie said they put a needle into it and didn't get any fluid. One would have to think of a malignant tumor in this case. I would strongly advise a specimen of that tumor being taken for microscopic examination.

What should be the diet of the baby? I am quite radical in feeding. Probably a lot of men will say this is too radical. It has been my practice in my own private work at home to start babies at the age of six months on the following diet. If you follow the babies, study them, see them once a month and see how they react, keep them going, you will find that they will be able to take a diet such as I am going to give you. That does not mean that every baby must have everything that I am writing out here on the same day. Don't try to give them everything on the same day, but you can start in at six months. First, whole milk. Children vary in their taste for milk. Some like milk and some don't. I don't believe in forcing milk on them. The milk concerns have gotten up a big propaganda with slogans "A quart of milk a day." If you study your children you will find that they belong to two groups, those that like milk and those that don't like milk. Those that don't like milk, like solid food. It is a mistake to try to force your baby to take milk if he is not a milk drinking baby. I usually specify a minimum of one pint a baby. A baby at six months can have all kinds of cereals. He can have toast, zwieback, graham crackers. He can have every kind of vegetable that you can make puree of and put through a sieve. He can have soups, broths, meat soups. He should have fruits. Recently I have come to try babies with fresh fruits. That was strictly against the law some years ago. But to my great surprise I find that a six months' old baby will take a great number of fresh fruits. Of course, the one they all go for and thrive on is bananas, but they will take other kinds of fresh fruit too if you start in carefully with small amounts.

Then a six months' old baby will occasionally take a small amount of egg. I usually start off with a soft boiled egg. Some children will take egg at six months, some at nine. It will not hurt to try them. You will be surprised how many children will take a spoonful of soft boiled egg and gradually get to taking a whole boiled egg.

Then there are the meat soups. Now that the fad is liver, we put liver in soup. I have tried

children with scraped liver on a cracker. The mothers soften that up a little bit and the babies take a little bit of the liver puree. So you can see the diet of a six months' old baby is very, very different from the diet that we were taught.

If you study the babies you will be surprised how well they thrive if you let them select the foods. I start meat as a rule when the baby is nine or ten months old, tiny bits of scraped meat. I would put this baby on a diet of that sort, eczema or no eczema. You would be surprised how often the eczema will get better if you improve the general nutrition of the child.

I meant to say a word about condensed milk. There are many kinds of advertised infant foods, and the practitioner should know what these advertised foods are. There is the group of milk substances, foods containing milk. Those are foods in entirety. Those foods would be Eagle Brand condensed milk and malted milk, various forms of malted milk and Nestle's foods. Those are foods that are foods in themselves. Then the other great bunch of advertised foods are just meant as additions to milk. The foods that are additions to milk are usually the carbohydrates. There is the group that is built around maltose, malt sugar, Horlick's malt food; there is Mellin's food that is made of maltose, and then there is dextri-maltose and other combinations built up around malt.

Then there is a group containing mainly starch, such as Robinson's patent barley flour and foods of that sort. Then there is the group that contains starch and sugar, such as Eskay's food and Denno's food.

The foods containing milk are advertised as foods in themselves. That is a great fallacy with particular emphasis upon Eagle Brand condensed milk. I am not speaking of other forms of dried milk or evaporated milk. There is the so-called evaporated milk on the market. There are dried milks, Dryco, Klim and Mammala. Those are milks that are dried. You add water to the powdered or evaporated milk and you have ordinary milk. But Eagle Brand condensed milk is milk which is evaporated down to one fourth, and that has 40 per cent of cane sugar added to it. That is the reason children do well for a short time on condensed milk, because they are thriving on cane sugar. Experience has shown that if you keep up that diet for any length of time, the baby will go to smash. I don't know whether you can say it is due to the high sugar or due to the lack of protein, mineral

matter, and fat. Those babies get severe rickets, and after a month or two months of Eagle Brand condensed milk, if they get an infection, such as pneumonia, they will go to pieces. Those are the babies that die with infection in a day or two days. The high carbohydrate babies are usually fed on Eagle Brand milk.

I would warn you against using these others as foods. The methods that we have throughout the Chicago welfare station are simple. We just use simple dilution, half milk for a baby of one to two months, with five per cent carbohydrates, and two thirds milk for a baby two months and over. We don't follow any rules and regulations at all.

DR. ZIMMERMAN: This patient is nine years old; had the diseases of childhood, measles, chickenpox, whooping cough. That was four years ago. Following the measles it had an attack of rheumatism, also enlarged cervical glands. It was not seen by the family physician until about three weeks ago. States that three months ago the child seemed very restless and nervous and had twitching of the muscles. When the family physician saw her three weeks ago he prescribed rest in bed following some bromides. That is all the history I obtained from the physician.

DR. GERSTLEY: The history here is one of chorea. The youngster should be undressed. We will take it for granted that this child did have chorea. Chorea is characterized by two types of muscular activity. The one type is contraction of minute muscle groups, which you can't simulate voluntarily, just little lightning contractions of muscles. The second is the large incoördinate motion. It is apparent sometimes in the face, sometimes in the hands, sometimes in the legs. A good way to bring it out is to look at the child's tongue. Often it is shown only in the tongue.

The child right now does not seem to show many symptoms. Usually I do this while the child is lying down. A way to bring out choreiform movements, in a child that you are pretty sure did have chorea, is to cause mental excitement. That will bring out the muscular activity. So I usually ask the child some questions of arithmetic or something of the sort.

Do you go to school?

"Yes."

What grade are you in?

"Third grade."

How much are four times two?

"Eight."

That is a very valuable little test. You see with the small amount of mental exertion there was no great exaggeration of muscle movements. She moved a little bit but there was no great amount of choreiform movement. I don't know how much chorea you see here. We see quite a little of it in Chicago.

Chorea is of interest to the pediatrician not only for itself but because it does seem associated with endocarditis. Has the child a heart lesion? No. I have studied chorea quite a little at the hospital at home, and I must confess that I do not find chorea as definitely related to endocarditis as we are led to think from the textbooks. When we read textbooks, it is A, B, C, every chorea is endocarditis. I have not found that true, and I am beginning to think chorea is not as definitely related to it as was formerly thought.

Again, chorea is supposed to be caused by focal infections. I have studied these children quite carefully and had their tonsils taken out. I can say absolutely that tonsillectomy does not help chorea. Tonsillectomy is of no value in chorea. It may prevent heart complications; that I don't know, but it does no good for chorea.

The treatment of chorea: First, rest in bed. The child should be kept in bed for six weeks. I should say, absolutely flat on her back. She should be kept in bed until you can put her through that little test I just showed you, of going through mental excitement without having a lot of twitching of the arms and legs, and so on. Bed is first and foremost.

Drug treatment is incidental. Some men like bromides; some like luminal; some like Fowler's solution. All of them are incidental to the main thing which is mental and physical rest plus a good diet.

Recently I have been trying sulpharsphenamin. There is danger in using sulpharsphenamin because we got a couple of cases of jaundice. I would use it with care. Of all the drugs that have been used, I think sulpharsphenamin is the most valuable in the routine treatment of chorea.

This child does not seem to have much chorea now.

The ketogenic diet has been tried at the hospital. At the same time that Leopold, of New York, reported excellent results with the ketogenic diet, we tried it and in some cases it did

more harm than good. That was our experience.

In using sulpharsphenamin give 0.2 gram about twice a week until you get up to 2 grams. That is what we have been doing at home. A few kids have shown toxic symptoms, so I would watch them pretty carefully. But I am very skeptical about drug treatment in chorea. I have been studying these youngsters four or five years. We had two very acute cases. One child was so sick it could not talk at all. Another child was in the hospital for six months and couldn't stand, it would just lie flat in bed and twitch all the time. One case went six months without treatment, and to the other we gave sulpharsphenamin and it was quite well at the end of three months. Those were exceedingly severe cases. But most of them are well in six weeks. Those two cases, at any rate, showed a decided superiority of treatment in one over the other, but I am not giving that to you as specific.

For a long time in the hospital we used no drug treatment at all. Ninety-nine out of one hundred will get well just by rest in bed.

Heredity plays a very important part in chorea. There is always a history of some nervous affliction in the ancestors, in the father or mother or grandparents, not necessarily chorea, although I have inquired, and you would be surprised to find how many mothers give a history of having had chorea in childhood. If you don't get a definite history of chorea you get a history of some nervous affliction.

It is classical to get a rheumatic history. That is what the textbooks say. I would hesitate to say it is not so because every textbook says it is. But I have just grown a little skeptical, because the younger children I see do not give a history of rheumatism as much as the older children. I am beginning to wonder if maybe rheumatism isn't coincident. It is more frequent in the older children. I have been studying these choreas and I find very few cases in children of four, five and six years of age are associated with rheumatism. A child may come back later with rheumatism. The textbooks all say they have it and men of great experience say they have it.

DR. ZIMMERMAN: This patient is four and one half years old. Since three years of age she has had repeated attacks of distress after taking food. The distress was located in the gastric region. At this time there was an ele-

vation of temperature from 100° to 101° rectally; anorexia, repeated attacks of diarrhea, with bloody mucus in the stools; tenderness of the right lower quadrant; sometimes vomiting; blood count, leukocytes 20,000; 72 per cent polymorphs; 27 per cent small lymphocytes. Two months later, leukocytes 22,000; polymorphs 78 per cent and lymphocytes 22 per cent. Patient has been x-rayed and the appendix region was found suspicious. Urine has been negative throughout.

DR. GERSTLEY: Here is a youngster in whom the symptoms point to an appendix. I am very glad to have this case because appendicitis in childhood is a condition which is often overlooked or which is not sufficiently emphasized. The tendency of most men up to a few years ago was to look for something else. We know that in adults other things, pneumonia and various other things simulate appendicitis. So the pediatrician up to a few years ago was tempted, if the child had a pain in the abdomen, to look for pneumonia or something else. It is only within the last few years we have come to realize that appendicitis in childhood is far more common than we formerly considered it. It also is a very treacherous, deceptive disease. It does not give the symptoms in childhood, the clean cut, classical symptoms that it gives in adults. Again, the child is much harder to examine than the adult.

I don't know any disease which is more treacherous, and in which the physician must be on the alert, and in which the physician so holds the life of his patient in his hands as in appendicitis. It is exceedingly important. We have not time to go into all of that now, but in pediatrics I lay more emphasis on history than on physical examination. If you spend time on your histories you will get all sorts of things that you never would get in your physical examination.

The history of the average appendicitis case is pain. That is the first thing. But in the child the pain can be diffuse. The pain can be all over the abdomen or at any place. The appendix is often up under the liver, or you can get reflected pain all over the abdomen. So the locality of the pain is at first unimportant. It is a constant pain. It isn't a pain that lets up as gastrointestinal colic, but it is a constant pain and makes the child cry. Then to relieve that pain, the child lies down. You usually find your acute case lying down, not sitting up in bed.

Then the child often takes a position to relieve tension on the muscles, often flexes the right leg, and the same way to relieve abdominal pain. Breathing is costal. Those are things you get by the first inspection on the history of pain. There is usually temperature. The temperature is low to begin with. You don't get an appendicitis starting in with 103° or 104°. It usually starts in at 99° or 101°. You get that history for twenty-four hours or so. There is some vomiting, usually constipation, sometimes leukocytosis. But leukocytosis is the most treacherous thing. I have seen the worst cases with normal leukocyte count when the tension was relieved and the appendix ruptured, so I am not impressed with the leukocyte count, although it is of value if you get an increased leukocyte count with a high differential.

As regards the technic of examining the youngster. There are one or two points in the technic of examining children for appendicitis. If we can imagine she is lying down, the first thing is palpation, ruling out, of course, pneumonia and the various upper respiratory diseases. The first thing is palpation of the muscles. In palpating the muscles, remember that it is the rigidity that counts. You are not trying to elicit tenderness in your first palpation, you are just trying to elicit rigidity, so you use very light palpation, just enough to feel the muscle. You are not trying to feel below the muscle at all. Just put your hand on the muscle itself; feel if that muscle is rigid. That causes no pain. Then it is well to compare one side with the other, one rectus muscle with the other, and see if there is a difference in rigidity between the two sides.

It is a good idea in a child to start with the left side because most of the pain is on the right; it is most likely to be there when it comes to local tenderness. So just to get the child's confidence it is usually a good idea to start on the left. Often a child's muscle is so rigid that even if you do press a little bit, it does not cause pain because the child's muscles are rigid and you are not getting down low enough. Then when you relieve the pressure, the relief of that tension brings out pain which you did not elicit on the first palpation. Those are a few of the things in the examination of a child. First, the very light palpation and then remember that you often get pain in the history of it.

There is one little bit of technic which I hoped to demonstrate here but which apparently can't

be done, which I have found of considerable value, for every child is suspicious. Of course they are suspicious. If they have been having a stomach ache all night long, they don't want you to be poking around their stomach very much. So if you get their confidence by examining some other part of the body, you will have no trouble. Usually if the child is lying down I take the ankle and start examining it, and then give a push, or shake the child. If there is any irritation around the appendix, just the shaking of the child will cause a scraping of the appendix against the peritoneum, the child will grab at it and localize the inflammation for you. When a child is very unruly you can bring out inflammation around the appendix by that method where you can't by examination of the abdomen alone.

In discussion of the appendix, I want to re-emphasize the great importance of the lack of symptoms of the ruptured appendix. The child has been crying twenty-four hours, has temperature, leukocyte count and so on. When you come in the mother tells you that the baby had a stomach ache but it is all right. Every man in his beginning practice, has made the same mistake. You go away. The baby is fine; temperature is normal; the pulse dropped; the leukocyte count is normal. That is the most dangerous condition that I know of. I don't know any condition in pediatrics where you can be so easily fooled, because the baby may be well, but that is the time the appendix may have ruptured. The tension of pus in the appendix has been relieved, and for a few hours there are absolutely no symptoms, and then the fatal peritonitis starts in.

Whenever you have a child with pain in the abdomen, and that pain is suddenly relieved, don't go away and say the baby is all right. Tell the mother, "I want to hear from you again in three or four hours," and stay in close touch with the telephone.

There are one or two other points as regards appendicitis. One is the variability of the symptoms. The appendix is innervated by nerves which go around to the lumbar nerves. Inflammation of the appendix is transferred along that and reflected back along the nerves of the skin. So the very first sensation may be at any place in the abdomen, often around the navel. That is due to the reflex conductivity of the sensation from the appendix to the lumbar nerves and back to the skin.

After the appendix has been inflamed long enough to irritate the peritoneum, then you get your local findings. But the first symptoms are always general, and that is why a child is very difficult to do very much with.

There is one other condition in the child we must not overlook and that is nose and throat infections. We have found (and that is where we can make mistakes very readily) nose and throat infections, or, as we call them, upper respiratory infections, tonsillitis, pharyngitis and bronchitis, often cause gastrointestinal colic, but that same infection is often associated with appendicitis. It is a dickens of a job sometimes to make up your mind whether little Susan who had a little cough or cold and complained of pain in her stomach had gastrointestinal colic or true appendicitis. You will be surprised how often she has true appendicitis. For that reason, every time you get a child with a cough or cold with indigestion look out for appendicitis. Very frequently infections in the nose and throat settle simultaneously in the appendix.

Every time you get a child with a cough or

cold and pain in the abdomen, don't dismiss it as gastroenteritis but be on the lookout for appendicitis. Under those circumstances never give physics. If physics are given, the appendix will rupture and form local abscesses. The surest way to cause a ruptured appendix and general peritonitis is to give physics. Some surgeons say that if the child has any pain in the abdomen and a physic has been given, they would operate. Whenever you have the slightest suspicion of the appendix, cut out all cathartics. That is the surest way to make an inflamed appendix rupture.

This child has a history of bloody enteritis. That does not go with the appendix. The first thing you would think of in this case is that the child, if it has been out of town, maybe had dysentery. We are finding amebic dysentery much more commonly. Geiger found amebic dysentery not at all uncommon. I understand the stools of this youngster have been examined and they have been negative, but I would continue the search in a case of bloody diarrhea. That bloody diarrhea, if it amounts to anything, is not as likely to be a symptom of appendicitis.

CLINICAL SYMPTOMS AND TREATMENT OF EXOPHTHALMIC GOITER*

By J. TATE MASON, M.D.

SEATTLE, WASHINGTON

Disturbances of the thyroid gland, which have constituted one of the great medical problems of the Pacific Northwest, are apparently decreasing. Ten years ago it was estimated that 65 per cent of the boys and 75 per cent of the girls of that region, between the ages of 12 and 18, had some enlargement of the thyroid gland. Fifteen years ago there were districts east of the Cascade Mountains, especially in the valleys drained by the Methow River, in which all the domestic animals had enlarged thyroids. It is interesting to note that the Indian and his dog, whose meat diet was largely composed of salmon, had no enlargement of the thyroid. The inhabitants of these valleys have now, however, become educated to the use of small quantities

of iodine, so that they are as free from disturbance of the thyroid gland as are the inhabitants of other sections of the Northwest.

There is still about as large a proportion of patients with exophthalmic goiter as ever, and most of these have lived in the rural districts, where from 65 to 75 per cent of the people have some enlargement of the thyroid gland. This observed fact causes us to believe that once the internal secretion of the gland has been disturbed there remains an instability, which later in life often permits a hyperplastic thyroid to develop, with its accompanying toxemia. Because of the more frequent early administration of iodine we do not see the typical syndrome of exophthalmic goiter so often as formerly. Without iodine there is typically a gradual increase in the severity of the symptoms until about the eighth month,

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at which time the patient's condition becomes markedly worse. About the ninth month there is an explosion of symptoms commonly known as the crisis. After this has passed there is a period of improvement, with fairly constant symptoms. About the end of the second year there occurs a second crisis, which is never quite so severe in its toxic manifestations as the first.

We have for years endeavored to elicit the clinical symptoms of each patient, and from these symptoms to classify the patients according to the four stages of the disease. In the first stage or group are those patients seen very early, after six to eight weeks, at a time when diagnosis is difficult because no specific criteria can be fixed as to when normal function of the gland ends and hyperthyroidism begins. This stage we designate as the "early exophthalmic." Placing these people in the hospital on a definite medical treatment for exophthalmic goiter, obviates in a majority of cases the necessity for surgical interference.

In the second group are the patients who come for examination later, one or two months before the crisis occurs. They present pronounced and progressive toxemia, loss of weight, rapid pulse, and high basal metabolic rate. This stage we designate as the "ascending exophthalmic." Partial thyroidectomy after preliminary medical treatment is always indicated for the patients of this group.

In the third group are those patients who have reached the crisis. The gland is giving off its maximum amount of toxin. Some of these patients are not extremely ill. In others the condition is marked by cardiac decompensation, vomiting, acidosis, prostration, and delirium. Some of these patients die. This syndrome is called the "crisis." Surgical treatment is not indicated in this stage of the disease until the symptoms have subsided markedly.

In the fourth group are the patients who have been ill for years. In them is found marked exophthalmos and sometimes bronzing of the skin. The basal metabolic rate is almost always increased, but it never runs very high. Usually these patients, if able to work at all, carry on with difficulty, no matter how light their work is. Compared with their former state their condition is very bad. This we have designated as the "late exophthalmic" group or, so to speak, "the educated gland." Partial thyroidectomy in this group of patients gives much relief, but they are never cured completely because damage

to the vital organs has already been done.

There are two classes of patients with exophthalmic goiter who require a great deal of care and observation. Early recognition of the condition seems to be the most important factor in their ultimate recovery. The first class includes young girls, who develop the disease and become worse so rapidly that they may die probably in an explosion of hyperthyroidism so violent that not all the classical symptoms have time to develop. We have noticed this more frequently in blond individuals inclined to obesity, who have small bones and tapering fingers. The second class includes patients in the fifth decade or beyond, who develop the disease rather suddenly. In neither of these groups is there an appreciable enlargement of the thyroid gland. They became ill so rapidly that we must assume either a very poor resistance to the disease on the part of the patient, or that the toxemia is extremely grave. Skin pigmentation is sometimes so marked that it suggests Addison's disease, and is particularly prone to appear in this group. The goiter is small and on palpation is hard. There is rapid weight loss, tremor, irritability, rapid heart action, and marked loss of strength, but no exophthalmos in either group.

Early in 1925 we were impressed with the large amount of colloid material in the gland following a course of iodine therapy. On investigating the thyroids of dogs before and after the administration of iodine, we found the same colloiddization of the gland that had been noted in the exophthalmic goiter patients after the administration of iodine. In July, 1925 we were able to obtain a small piece of gland from a patient before iodine had been given and later to remove the gland. Comparative study of these sections proved to us conclusively that under iodine therapy there was a great change in the histology and pathology, not only of the normal thyroid but also of the hyperplastic type of gland.

In the patients treated medically, colloiddization of the gland is complete in 14 days, although the vital organs still show the result of the toxemia which has been present. Four years ago we made a careful investigation of our postoperative difficulties and fatalities. Our conclusions from this investigation were that some had been operated on before they had had sufficient or efficient medical treatment. Other immediately bad results were in those patients critically ill, near the crisis, who had continued to lose weight,

although their clinical symptoms were somewhat improved before operation. To prevent these postoperative explosions, which often very nearly wreck the patient even if he escapes death, we decided that the preoperative treatment must be long enough not only to allow the clinical symptoms to subside, but to cause the patient to gain from one to five per cent of his body weight. That the gain in weight has some particular importance in regard to the postoperative reaction was again impressed upon us, when we went over a series of records of patients who had been critically ill, with a high basal metabolic rate, bounding pulse, weakness, tremor, etc., the symptoms which go with this type of case. We found that those patients who had gained some weight immediately prior to the operation had done well uniformly after operation.

The cause of exophthalmic goiter being still unknown, though a number of theories have been suggested from time to time, for the past three years our patients have been placed upon a treatment designed to combat some of the possible causes, which included in it a management to increase the body weight slightly. It is designated as "The Ten Procedure Treatment." Some of it possibly is unnecessary, but from our limited knowledge of the cause of hyperthyroidism we do not know which procedure to discontinue. Their use has given us so much satisfaction that until something more definite and better offers itself we will continue this treatment and would suggest that others try it. This general preoperative preparation is followed in all cases with variations to suit individual conditions.

THE TEN PROCEDURE TREATMENT

1. Rest. Complete rest in bed in the hospital in a quiet pleasant room, preferably alone, is demanded.

2. Oxygen. A plentiful supply of oxygen furnished by free ventilation of the room, and in extreme cases two hours each day in an oxygen tent, is prescribed.

3. Precordial Application. An ice bag is kept over the precordial region constantly.

4. Distilled Water Only to Drink. A large jar of cool distilled water (not cold) is kept by the bedside and the patient is requested to drink as much as possible. He is asked to fill his glass completely each time and drink all the contents. If the theory that the hyperplasia of the thyroid gland found in exophthalmic goiter is due to

stimulation by organic or inorganic chemicals in drinking water and derived from the soil is correct, this procedure eliminates or combats the action of such chemicals.

5. Intestinal Antisepsis. An intestinal antiseptic in the form of triple sulphocarbolate, grains five, three times a day is administered. Its use is based on the theory that there is a specific intestinal flora, the toxic properties of which absorb the iodine of the food and in some other way deprive the thyroid gland of the iodine needed for the production of the 33 mg. of thyroxine metabolized by the healthy individual every twenty-four hours.

6. Colonic Irrigations. A colonic irrigation of normal salt solution is given once a day. Iodized salt is used in making up the salt solution. Two quarts of the solution are allowed to run into the bowel under very slight pressure. When the patient expels it the procedure is repeated four or five times. The colonic irrigations with an intestinal antiseptic are intended to down the growth of intestinal bacteria and to prevent absorption of toxins.

7. High Calorie Diet. The patient is encouraged to take a diet of 5,000 calories' value daily. The diet is selected to contain large portions of seafood, asparagus, beets, carrots, and mushrooms. These foods contain small amounts of organic iodine. We have felt for some time that these patients need organic iodine as well as the large quantities of inorganic iodine we are able to give in the Lugol's solution.

8. Night Cap. At bed time a "night cap" consisting of one ounce of honey, a bowl of crackers (about six), a pat of butter, and a glassful of milk with two heaping teaspoonfuls of lactose is given (approximately 750 or 800 calories). This increases the glycogen reserve of the liver and we feel is much more efficient than glucose given intravenously, as it has been proven by Ravdin that digested glucose holds the sugar curve higher and longer than that given intravenously. Ten grains of sulphonal are given at the same time to patients who sleep poorly.

9. Oral Antiseptics. The gums are swabbed twice a day with an antiseptic solution (two per cent) of acriviolet. The solution used is made up as follows:

Gentian violet (gram positive) one part.
Acriflavin (neutral) (gram negative) one part.
Water to make 100 c.c.

It is applied by means of cotton applicators.

People who are in the habit of brushing their teeth daily prior to their admission to the hospital are given besides the oral antiseptic a powder called "Antox," the principal ingredient of which is perborate fortified with an additional alkali.

10. Iodin. Lastly, iodine is given according to the degree of toxemia apparent. Basal metabolic rate determination gives some information as to the severity of the toxemia. The dose of Lugol's solution is anywhere from 30 to 150 drops daily.

CONCLUSIONS

In the past three years approximately 300 patients have been treated according to this plan. Comparing them with a group of cases treated earlier, it is found that the basal metabolic rate falls lower in this later group; that the patients have gained more weight by from three to five pounds; the pulse rate has fallen more rapidly; their stay in the hospital before operation is two or three days shorter; and up to the present we have not observed a single severe postoperative toxemia.

We are firmly impressed that some of the procedures among the ten are vitally important for the patient. Statistics are often misleading, particularly when so small a group of cases is analyzed, but to those who have seen these patients before this above described treatment was given, and to those that have had the benefit of it there is no question as to the efficiency of the method.

DISCUSSION

DR. J. W. BOWEN (Dickinson, N. D.): I have been very much interested in this paper and think Dr. Mason gave us a nice description in a very masterly

manner. I can only emphasize some of the things he mentioned. One is acute thyrotoxicosis in young girls. My experience has been, I think, the same as most of you, that these are the bad cases. Take a girl sixteen to eighteen years of age that comes down with symptoms of exophthalmic goiter. We must give that patient plenty of treatment and plenty of time before we attempt anything in an operative way.

I wish to emphasize the point about allowing these patients to gain weight. We should never attempt to operate before this occurs. I think if we keep these two points in mind, to look out for the bad cases in young girls and never operate until the patients begin to gain weight, we shall accomplish a great deal.

TWO WEEKS TREATMENT

FALL IN PULSE

Old Treatment

22

New Treatment

32

FALL IN METABOLISM

Old Treatment

15

New Treatment

30

GAIN IN WEIGHT

Old Treatment

2½ pounds

New Treatment

8 pounds

Chart illustrating paper of Dr. J. Tate Mason for North Dakota Medical Association.

CASE REPORTS*

By STANLEY R. MAXEINER, M.D.

MINNEAPOLIS, MINNESOTA

Mr. Leonard K., whom I first saw on June 11, 1929, through the courtesy of Dr. LaPierre.

Patient is a male, single, 26 years of age and an ice cream maker by occupation. Family history is negative. Denies venereal disease.

Past history: At two weeks of age, patient was operated upon at the level of the lower end of the

sacrum for what he terms ununited sacrum. He does not know whether this was a spina bifida or not. He states that he has had constant bed wetting at night since birth, but during the day his bladder is under control. Three years previously he had a sudden illness characterized by backache, chills, fever, etc., and was laid up for one week with what was called rheumatism. Following this, he first began to notice frequency of urination. Subsequently, he had

*Presented before the Minneapolis Clinical Club, April 17, 1930.

one attack of hematuria. Two and one-half years ago he was subjected to a cystoscopic examination because of pyuria and frequency of urination. This examination revealed a partial anesthesia of the sacral nerves, as the cystoscopic was done without anesthesia, and, apparently, without much discomfort. The bladder was found to be greatly trabeculated with probable diverticula but the ureteral openings could not be located.

Present complaint and examinations: No further examinations were made until the patient reported to me, complaining of frequency and painful urination, and wished examination to determine whether it would be possible for him to marry. The urine showed many pus cells, a few red cells but no tubercle bacilli. Blood chemistry is entirely within normal limits. A cystoscopic examination performed in June, 1929, under novocaine instillation revealed no evidence of urethral obstruction. The bladder wall showed numerous diverticula and trabeculae but no new growths or calculi. The mucosa was red and showed evidence of severe cystitis. It was impossible to locate either ureteral orifice. Under hydrostatic pressure with sodium bromide solution, the bladder was distended and an x-ray

quent cystogram, which was again done under hydrostatic pressure, and revealed besides the diverticula, a bilateral hydroureter and hydronephrosis. Bacterial examination of the catheterized urine showed streptococci, and prostatic massage also yielded a pure strain of streptococcus.

CONCLUSION

This patient has undoubtedly had a spina bifida which was operated upon in infancy. A disturbance of his trophic nerves, together with his sensory and motor nerves to the lower urinary tract, has undoubtedly produced a condition similar to that following injury to the lower spinal cord centers. The end result is a condition represented by a thickened bladder with diverticula, a hydroureter and hydronephrosis, with a superimposed infection.

I have taken the liberty to present this case because it demonstrates the extreme value of a cystogram and how much unexpected information was gained in this case by this procedure.

DISCUSSION

DR. H. M. N. WYNNE (Minneapolis): About ten years ago I showed a similar film before the Society. Dr. Peppard will recall this patient as he also examined her at that time. A cystogram showed bilateral hydroureter and hydronephrosis. This was a case of obstruction due to a very tight stricture of the urethra. As Dr. Maxeiner has pointed out, a cystogram may give us unexpected and important information. A large ureter with a very large orifice may be very difficult to find and catheterize in a trabeculated bladder.

Dr. Maxeiner has mentioned air embolus following the injection of air into the bladder. A number of such cases have been reported. The Kelly cystoscope utilizes air distention of the bladder at atmospheric pressure, with the patient in the knee chest position. I have never heard of any case of air embolus following the use of this method.

DR. MOSES BARRON (Minneapolis): I believe that this condition could have been diagnosed from the history alone, without much examination. When a patient gives a history of an operation on the spinal cord in the lumbosacral region and gives a history of escape of urine at night, and the cystoscopic examination shows a trabeculated bladder, one at once thinks of a case suffering from a cord lesion. Such lesions result in pyonephrosis and the patient usually dies of uremia.

The lesions produce paralysis of the bladder and ureters with resulting stasis and hydronephrosis and this later develops into pyonephrosis. The same type of condition develops as from an obstruction low down. When there is paresis of the ureters, the ureters become dilated because the urine cannot properly run down into the bladder. The peristaltic action in the ureters is necessary to force the droplets of urine from the kidneys into the bladder. The result of paresis of the ureters is therefore the same as from obstruction. In this very interesting case one would think of hydro- or pyonephrosis because of the history of operation on the cord, the incontinence of urine at night and the finding of a trabeculated bladder through cystoscopy.



Fig. 1. This shows the spina bifida in the sacral region, numerous diverticula of the bladder, greatly dilated tortuous ureters and a bilateral hydronephrosis of marked degree.

taken (Fig. 1). Numerous diverticula were visualized and leading from the bladder were two sausage shaped shadows which were evidently dilated ureters. Because of the fact that this condition was not suspected and it was not anticipated that the solution would enter the kidneys, only the lower portion of the urinary tract was exposed.

The patient returned to the hospital for a subse-

PROTECT PHYSICIANS THAT THEY MAY PROTECT SOCIETY

By C. F. DIGHT, M.D.

President Minnesota Eugenics Society

MINNEAPOLIS, MINNESOTA

On July 1, 1930, Minnesota had eighteen state supported institutions filled with 14,290 persons, most of them feeble minded, insane and epileptics incapable of self-management, a burden upon society, costing tax payers in all about \$9,000,000 annually, as shown by the report of the State Board of Control.

So long as mental defectives who are at large continue to procreate, the number of state wards will increase. Legislation to prevent it should be seriously considered, it seems, by legislators at their 1931 session, when the State Board of Control will ask for about \$11,000,000 for its work, which does not at all reach out to prevent reproduction of mental defectives at large by the simple operation of sterilizing them. But the State Board of Control has persistently opposed enactment of a law permitting of that.

A few thousand dollars used annually in that form of prevention, under a suitable law, would soon reduce by millions the yearly cost of mental defectives to the state, and would in time free us almost entirely of, or greatly diminish, the number of feeble minded, insane and epileptic state wards, and of the many ills which such persons outside of state institutions bring to society.

Physicians everywhere know of persons at large, who, because of mental subnormality or disease are unfit to have offspring, but for reasons to be stated physicians are helpless to prevent it. Within twenty miles of Minneapolis a feeble minded man and woman married some fifty years ago and had seven feeble minded children. There are now about two hundred identified descendents of that couple, none of whom, it is claimed, are normal mentally. Had the first pair been sterilized they might then have married and the State would have escaped much expense and a lowering in quality of its citizenry.

Morons contribute largely to this lowering and to the number of our state wards, because they are at large, and they generally marry their kind, in which case all of their children, usually a large number, will very certainly be of a low grade mentally. Scattered all over Minnesota there are homes with a mentally subnormal child

that cannot be made normal. The parents in some cases want and in most cases would no doubt approve of its sterilization, if the simple operation and its humane effects were explained to them. But under our present inadequate sterilization law the child, to be legally sterilized, must be committed as feeble minded to the State Board of Control. That means in most cases to take the child from home and its parents. They dislike such separation, so it goes unsterilized and in time becomes in many cases the parent of other defectives often worse than itself. We need an adequate sterilization law to meet such cases.

Our present law is inadequate in three ways. First, it does not apply to mentally defective persons at large; second, it is so worded as to rule out from sterilization the moron inmates of state correctional institutions, the very persons whose mental defects make sterilization of them greatly needed, and who generally after a brief detention go out and procreate whether married or not, or become sex delinquents; third, the law requires written consent before even a blank idiot or other feeble minded state ward can be sterilized. Consent is often refused, and that defeats the law, inadequate as it is. Only 163 persons have been sterilized under the Minnesota law up to June 30, 1928, and but a few since then, while in California almost 7,000 feeble minded and insane state wards have been sterilized.

Unfitness to procreate can be determined by a board composed of three persons, the probate judge of the county involved, a licensed physician, and a person skilled in mental diagnosis. The board's decision would be based on evidence gathered from a study of the person's previous delinquencies, his personal and family history, his departure from the normal, and his intelligence, as determined by mental tests. By this procedure and from evidence thus secured, probate courts all over the land for generations have been deciding whether or not any certain person is feeble minded or insane, either of which defects constitutes unfitness to procreate and makes sterilization or segregation of the

person necessary, in most cases for his own interests and for the protection of society. The United States Supreme Court has upheld the constitutionality of the Virginia law, which provides for sterilization of feeble minded and insane state wards with or without consent. At this time, however, sterilization should perhaps not be done on persons at large without consent of their legal guardian or kin folk. Aside from a board such as named there should be a state eugenicist who has expert knowledge of human biology, heredity and eugenics, who would give his time to carrying out the provisions of the eugenics law.

Procreation of the unfit at large is going on almost unrestrained; it is breeding intelligence and the qualities of good citizenship out of the

American public, and we are getting the natural results in inefficiency, increasing dependency, delinquency, vice, and crime. Physicians recognize this and they would gladly change the situation by use of the safe and simple means which science and surgery have developed, were there a law permitting it, but they dare not do what they know should be done for fear of prosecution. Physicians should be protected against that in order to give to the State a much needed social service which none but they can render.

Doctor, why not urge your state legislators to enact a law at their next session providing for sterilization of defectives at large, who by legal procedure may be found unfit to procreate for reason of mental deficiency.

PROCEEDINGS OF THE MINNEAPOLIS SURGICAL SOCIETY

Meeting of November 6, 1930.

Dr. A. T. Mann, President, presiding.

The regular monthly meeting of the Minneapolis Surgical Society was held in the Lounge of the Hennepin County Medical Society, on Thursday evening, November 6, 1930. The meeting was called to order at 8 p. m. by the President, Dr. A. T. Mann. There were 26 members and 6 visitors present.

On account of the length of the program, the reading of the minutes of the October meeting was omitted.

The scientific program was as follows:

Dr. John Rishmiller presented a case report on "Habitual Dislocation of the Shoulder, and the Clearmont Operation," with a general discussion of shoulder joint injuries. (To be published later in the *International Jour. of Med. & Surg.* and the *Surgical Journal.*)

Drs. L. H. Fowler and Wm. A. Hanson gave the following report of a case of "Embolic Gangrene of the Foot", the report being read by Dr. Hanson, after which the patient was presented:

The patient was a man aged 54 years, whose past history was essentially negative. On February 4, 1930, he had severe sharp pains in the arms, back and chest at the level of the nipple line which were not related to exercise. He had many carious teeth with recession of the

gums, gingivitis and pyorrhea. Examination was otherwise negative.

On February 22, 1930, he had six lower teeth extracted, with no reaction following. On May 20, 1930, he had six upper teeth extracted, one surgically, with curettement of the sockets. On May 22, 1930, he began to have sharp pains over the chest of a stabbing character, with clonic contractions of the neck, chest and arm muscles. Six days later he had an increase in temperature to 101°, pulse 95. At this time he complained of pain over the dorsum of the right foot between the large and second toes. There was a small abrasion with an erythema about this area. He had marked hyperesthesia over the dorsum of the foot extending to the outer surface of the ankle. On May 31st he developed a temperature of 103° with a serosanguinous bleb about 3 by 4 inches in diameter over the dorsum and lateral side of the foot. Also a similar bleb 1 by 1 inch appeared over the medial surface of the foot. The whole foot and leg below the knee became markedly swollen, red and indurated. The patient was very toxic, delirious, with a temperature of from 103° to 104° for several days. General supportive measures were instituted. The foot and leg were treated by elevation, hot packs, Ochsner's solution for 24 hours, and then continuous irrigation with Dakin's solution. His general condition gradu-

ally improved. The cellulitis of the foot and leg cleared up. The skin and subcutaneous tissue of the dorsum and the lateral surface of the foot sloughed away, exposing the extensor tendons. Eventually, clean healthy granulation tissue appeared over this area.

On June 24, 1930, a full thickness skin graft was done. This was not successful, probably owing to the impaired blood supply to the part. Later Tiersch grafts were applied with very satisfactory functional and cosmetic results. The patient has a practically normal foot today.

Careful examination by medical consultants have failed to disclose any pathology in the heart or lungs. All laboratory examinations including urine, blood, blood culture, x-ray, and electrocardiogram were negative.

The pathology was apparently due to a blocking of some of the smaller terminal vessels of the dorsalis pedis artery by infective or bacterial emboli originating from infection around the teeth.

DISCUSSION

DR. L. H. FOWLER stated that this was a "rapid-fire" fulminating condition. In February the patient had had no trouble following the extraction of six teeth which were pulled on account of marked infection of the gums around the teeth. Three months later he had six more teeth extracted, and in six days the acute chest condition developed which was apparently due to showers of small pulmonary emboli. Two days later he developed the lesion on the dorsum of the foot, particularly localized at the base of the great toe. First there were blebs on the skin. Soon the whole foot became edematous, and extensive cellulitis developed extending practically up to the knee. Within four days the whole dorsum of the foot was gangrenous. Eventually the superficial tissues of the lateral side all sloughed off down to the extensor tendons. The skin on the medial side of the foot retained its vitality in spite of the subcutaneous tissues being necrotic and infected.

Dr. Fowler called attention to two or three interesting phases of the case. Surgically, it did not present such a difficult problem except combating the infection. Part of the skin grafts used followed Dr. Wangenstein's method of cutting the Tiersch grafts into small bits and burying them in the granulation tissue. They took, and there is practically no difference today between those and the other areas where whole Tiersch grafts were applied.

Dr. Fowler said that the pathology in this case was interesting: How did these emboli get there? The gangrene was localized to the distribution of the arcuate artery, a terminal branch of the dorsalis pedis, and must have been due to an infective embolic process. He stated further that he had found very little in the literature on this subject;

only one case in recent years and that was a case of gangrene of the toes following tonsillectomy and reported in 1929 by Wright, which was associated with a subacute bacterial endocarditis. Dr. Fowler's patient never had any signs of a heart lesion. Pathologists say that very rarely emboli follow operations on the head and neck.

The speaker felt that the only logical explanation for this case just reported was that it was due to a bacteremia coming from the infected teeth, with the bacterial emboli lodging in these terminal vessels and causing the gangrene.

DR. E. A. REGNIER asked how Dr. Fowler accounted for the chest pains?

DR. FOWLER thought this was due to showers of small pulmonary emboli, and added that the patient had had four or five attacks of these sudden severe pains in the chest since he had been at home, but at no time had there been any definite findings in the lungs or in the heart.

DR. R. C. WEBB asked if an electrocardiogram had been taken.

DR. HANSON stated that an internist had gone over the heart very carefully and there had been x-rays and electrocardiograms taken, all of which were negative. He also added that at no time were the toes or sole of the foot involved.

DR. J. M. HAYES stated that he had been using the so-called Ochsner (or modified Ochsner) method of treating infections of the extremities for many years; and he knew of no one who had ever used it properly, going back to the old method of using plain hot packs for this purpose. Dr. Hayes felt that there was no doubt of its superiority over the use of the ordinary hot pack.

Many years ago Dr. Ochsner had observed this dressing used with saturated boric acid alone and the results were so satisfactory that he was led to do some experimenting with it. He observed that boric acid appeared in the urine after this dressing had been on a few hours. Taking bacteria from the wound before the pack was applied, and injecting them into the peritoneal cavity of a guinea pig, caused the death of the guinea pig in 24 hours. After this dressing had been on for 48 hours, bacteria from the same wound injected into the peritoneal cavity of a guinea pig failed to cause any disturbance.

Dr. Hayes stated that he and his associates had also carried out some of these experiments and obtained the same results. He added that, although the boric acid alone gave good results, he found that the addition of alcohol and phenol added to the efficiency of the solution. He called attention to the fact that several different solutions have been called "Ochsner's solution," and for that reason the one he used was referred to a "modified Ochsner's solution." The solution accredited to Ochsner in some dictionaries would cause a slough in 48 hours, but the "modified Ochsner's solution" would never cause a slough in 48 hours.

Dr. Hayes believed that the reason this treatment had not become more popular was because the technique of applying it was not carefully adhered to, and

that this was very essential in order to obtain the desired results. He said that the pack must be large, consisting of a thick layer of gauze over the skin, then a thick layer of good absorbent cotton, and an outside covering of rubber, making the whole dressing as nearly air-tight as possible. This dressing should not be disturbed for 48 hours except for the solution poured on two or three times a day through a small opening in the dependent portion of the dressing. The solution Dr. Hayes now uses is: boric acid, saturated solution ounces 28, alcohol ounces 4, and phenol drams 1. The dressing must be kept thoroughly saturated with the solution.

Dr. Hayes called attention to the enthusiasm of some of those who have recently gone out from the University, over this method of treating these wounds, and their satisfaction in getting these patients back to work so much more rapidly than by other methods.

DR. A. A. ZIEROLD asked if Dr. Fowler's patient had gangrene before or after the application of the Ochsner's solution.

DR. HAYES replied that there was a thrombosis present and evidence of a slough before the dressing was put on. This dressing will never give a slough in 48 hours.

DR. OWEN WANGENSTEEN stated that Dr. Hayes may be perfectly right about the use of this solution. He called attention to the fact that when Dr. Hayes began injecting varicose veins others were amused over it but that it was now a universally practiced procedure. He said that in the treatment of acute infections there are essentially two factors of primary importance: one is absolute rest, and the other increase of heat in the affected part. Nature does this in part by increasing the temperature locally. He wondered if water poured into the dressing as used by Dr. Hayes would not accomplish the same result, and called attention to the fact that a 1 per cent solution of phenol might cause gangrene in the terminal digits. However, he had seen patients treated by this method and had observed some of the good results which Dr. Hayes had obtained. He said he would like to see Dr. Hayes run a control series of these cases at the University Hospital, using hot water in the pack instead of the Ochsner's solution.

DR. HAYES stated that no doubt the method of applying the dressing was an important factor and that fair results were obtained with boric acid or even with sterile water, but he had tried these many times. When the infection was severe this was not enough. After trying several solutions the one given above was found to be the most efficacious and, if properly applied, will not fail to localize any infection of the extremity in 48 hours. The suggestion of having some beds for this work in the Hospital would be a most acceptable proposition.

DR. WM. HERBST stated that it is an interesting fact that boric acid has been demonstrated in the urine 55 seconds after immersion of the foot in a tub of boric acid solution, even when the skin is

unbroken. (Ref: Kahlenberg, L., *Jour. Biol. Chem.*, 1924-25, lxii, 149, p. 405.)

(The patient was then shown and attention called to the location of the grafts and the excellent result obtained in this case.)

Dr. Thos. J. Kinsella, of Glen Lake, then read his inaugural thesis entitled "Phrenectomy for Pulmonary Tuberculosis." This was illustrated with numerous lantern slides showing the condition of the lungs before and after operation.

An Eastman film on "Prostatic Hypertrophy" was shown after the reading of the papers. This proved to be an enjoyable feature of the scientific program and it is hoped that arrangements may be made to have similar films shown at future meetings of the Society.

The meeting adjourned.

H. O. MCPHEETERS, M.D., Secretary

CLINICAL SYNDROMES THAT INCLUDE ACHLORHYDRIA

JAMES S. MCLESTER, Birmingham, Ala. (*Journal A. M. A.*, Sept. 6, 1930), says that in the South is frequently seen a symptom complex that is exhibited with striking uniformity by an apparently heterogeneous group of diseases. This complex includes an anemia of variable degree, sore tongue, gastrointestinal disturbances, cord changes perhaps, and achlorhydria. Any one or any combination of these may dominate the whole and give color to the clinical picture, but achlorhydria is the one salient feature. It signalizes the group. The same case viewed by different men at different stages of its development or with different eyes is not infrequently placed by them in different categories; today the patient may appear to have sprue; seen at a later date he may be told that he has pernicious anemia or pellagra. The fact, then, that the diagnosis is so often determined by the momentary aspect of the disease or the bias of the physician would emphasize a possible intimacy of relationship between the several members of this group. Since the cause of the achlorhydria in each of these diseases is unknown, is it proper to assume that the gastric deficiency is of identical nature in all? And can this lack of acid be regarded therefore as the connecting link between several members of this group? Such an assumption is probably unwarranted. Yet, without predicating a single unvarying cause, it may still be possible to regard achlorhydria as the connecting link by assuming that it is the chance accompaniment of some more ultimate underlying gastric defect which, in combination with other factors of varying nature, expresses itself in symptom complexes of such striking similarity as to bring all of these diseases within a single clinical group. To illustrate the possible intimacy of relationship between the diseases of this group, McLester relates eight cases.

CLINICAL PATHOLOGICAL CONFERENCE

By E. T. BELL, M.D.

Department of Pathology, University of Minnesota

MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the *Journal-Lancet* is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—1169.

The case is that of a white man, 38 years old, who was admitted to the hospital August 5, 1930, and died the same day. Owing to his short stay no complete history or physical examination was obtained. However, according to the intern's notes, when the patient was admitted he complained of severe abdominal pain of ten days duration, with marked distension and constipation. He stated that he had been well sixteen days before admission, when he began to develop diarrhea and some bloody stools, the bleeding being attributed to the presence of hemorrhoids. He said that for the past year he had had bleeding and this had been attributed to hemorrhoids by physicians by whom he was being treated. Following the diarrhea the patient became constipated about ten days ago, and began to experience some pain in the abdomen. At first he had just a peculiar drawing sensation located in the right lower quadrant. This later became an aching pain and then sharp and colicky. He took cathartics without relief. He entered another hospital August 1, where an x-ray was taken and the patient was given some intravenous therapy. Enemas were also given without result. The patient had not eaten for one week preceding admission to this hospital.

About one year before this time he had an attack of constipation with colicky pains, but this condition relieved itself in a day or so.

Physical examination revealed ptosis of the right eyelid associated with enophthalmos. Patient stated that this condition had been present as long as he could remember. The face appeared flushed; there was some belching of gas frequently during the examination. The patient stated that he felt nauseated. The heart and lungs were essentially normal, although a thorough chest examination was not performed. The abdomen revealed marked distension and tenseness, the tenseness being so marked that a satisfactory palpation was impossible. No areas of increased tenderness or generalized tenderness were located. There was a definite metallic tinkle heard lateral to the left midline above the umbilicus, and also in the left lower quadrant. Definite borborygmus was detected. No peristaltic move-

ments, however, could be detected through the anterior abdominal wall. Rectal examination revealed tenderness in the anterior portion of the rectum. No obstruction could be felt, although the intern states that rectal examination was not satisfactory.

On August 5 the urine was amber in color; quantity was insufficient for specific gravity determination; reaction alkaline; no sugar; no albumin; only a few white blood cells in the sediment. The blood on August 5 showed hemoglobin 95 per cent; white cells 8,400; polymorphonuclears 72 per cent; lymphocytes 28 per cent; in group IV. Blood urea nitrogen 83.06 mg.; van Slyke 42; blood chlorids 346.5 mg.

The patient was given morphin sulphate and atropin sulphate preceding examination. Immediately on admission x-ray studies were made. Intravenous therapy amounting to 1,000 c.c. of normal saline with five per cent glucose was given. Hypodermoclysis, 1,000 c.c. normal saline was started and s. s. enema was given with good results. Following operation further intravenous therapy of glucose and saline was given. Cecostomy was performed and a tube connected to a bottle. A gastric lavage of 400 c.c. containing dark, thick fecal material was obtained.

Nurses' notes state that on admission the patient's skin was cold and clammy and that he complained of cramps in the abdominal region at frequent intervals. He was sent to the operating room and returned in a conscious condition. Pulse was of poor quality. He was perspiring profusely and his color was poor, as was his general condition. Later in the day he tried to get out of bed and talked and acted irrationally. He was put into full restraints. The abdomen remained very distended; he expelled some gas through the rectum and some from the tube from the cecostomy. The entire body became cold and clammy; he failed to void; respirations became labored and the pulse irregular and weak. The patient was pronounced dead at 10:50 P. M., August 5, 1930.

Progress notes are essentially those of admission and up to the time of exitus add nothing to those already given.

Post-mortem report. Marked gaseous distension

of the abdomen. Recent cecostomy incision. No peritonitis. Entire intestinal tract is markedly distended with gas. Cecum adherent about the cecostomy opening; no leakage. Old apical adhesions on both lungs. Bronchopneumonia in both lower lobes. Two metastases in the right lung and three in the left, each one cm. to two cm. in diameter. The liver weighs 3,950 grams and is filled with metastases, so that relatively little normal tissue remains. The tumor masses are invading the diaphragm on the superior surface of the liver. A tumor is found in the pelvic colon about eleven cm. above the upper end of the rectum. The tumor produces complete stenosis of the colon at this point. A small probe can hardly be passed through the lumen. The entire intestine above the tumor is enormously distended. No metastases are found in any of the lymph nodes.

Diagnoses. 1. Carcinoma of the pelvic colon with metastases to the liver and to both lungs. 2. Intestinal obstruction. 3. Operative cecostomy.

Comment. This case illustrates the danger of referring rectal bleeding to hemorrhoids without making a thorough examination. The high blood urea nitrogen and the decrease of blood chlorids are due to intestinal obstruction. The kidney function is normal but there is increased destruction of body proteins.

Autopsy—30—422.

The case is that of a woman, 41 years old, admitted to hospital February 25. She had dysmenorrhea, menorrhagia, and metrorrhagia for seven years; weakness, indefinite abdominal pains, pyrosis two years; insomnia three months. Other complaints: migraine; dyspnea on exertion; anorexia, leucorrhea since puberty. Patient extremely neurotic and very indefinite in her replies to questions.

Gastric history: had burning sensation in the epigastrium which seemed to pass through entire upper abdomen to the back. No relation to meals; not entirely relieved by soda; increased when eating fruit. Came on at various intervals, two weeks to a month, and lasted one to six weeks. Had taken laxatives for the past seven years. Stools varied in color; had never noticed black stools. Seldom vomited and when she did only mucus was obtained. Never jaundiced. Belched a moderate amount of gas; slight flatulence. Loss of appetite since onset of present condition. Did not know if she had lost weight but thought she had lost about ten pounds in two years. Bad taste in mouth for two to three hours after eating. Said her breath became foul. Passed a great deal of gas through rectum which gave her relief from abdominal distress. In November, 1929, had severe pain in the right upper quadrant, radiating to the back and right shoulder. Had to gasp for breath. Attack lasted only a few minutes. She had had similar pains but not so severe, off and on for the past two years. Burning sensation in the epigastrium came on after taking food.

Operation for fibroid seven years ago. Well up to 14 years ago and at that time therapeutic abor-

tion was done during the eighth week of pregnancy because of continued vomiting. Other complaints: dizziness, headaches, impaired hearing, chronic nasal discharge, occasional clot of blood, sore mouth, attacks of sore throat, enlarged thyroid since 20; dyspnea on exertion; chronic cough; burning urination; backache. Married 15 years; no children. Father living, 75, has stomach trouble; mother 72, not well; one brother has tuberculosis; one sister, 43, has hypertension, and one, 31, has kidney trouble. All her brothers and sisters and her parents have migraine.

Examination: lying in bed, not apparently ill; asthenic type; bilateral lid lag; horizontal nystagmus; visual fields normal. Enlarged submaxillary nodes on both sides. Diffusely enlarged thyroid gland with pyramidal lobe definitely palpable. No râles or impairment of resonance. Pulse 96; blood pressure 122/84. Heart not enlarged; no murmurs. Abdominal scar from previous operation. Tenderness in midline from xiphoid to symphysis and in right upper quadrant. Complained of pain under her shoulder blade when attempt was made to palpate liver. Mass in epigastrium four inches in diameter. Slight varicosity of lower extremities. Slight enlargement of inguinal nodes. Multiple papillomata of back. The abdominal mass was movable, located about two inches above the umbilicus, and situated across the midline. It was hard, and when palpated pain seemed to radiate to both sides of the chest. Liver not enlarged.

Urine negative. Blood: hemoglobin 95 per cent; white cells 9,850; polymorphonuclears 82 per cent; lymphocytes 18 per cent. Blood urea nitrogen 11.2 mg. Gastric contents, free acid present on two examinations. Basal metabolic rate + 10 per cent. Gregerson negative twice, positive twice.

X-ray March 12: slight pneumothorax, left. Normal lungs. February 26, diaphragmatic pleurisy, left. Probable enlarged thyroid. Negative lungs; carcinomatous infiltration of proximal end of stomach with probable ulceration. Definite infiltration in upper portion of the stomach at the junction of the cardiac and middle thirds. Appeared to be of scirrhus type and there was some evidence of ulceration on the side of the greater curvature and the anterior wall. The remainder of the stomach appeared quite normal. At the end of six hours the stomach was empty and the head of the meal was in the ascending colon. March 15, probable pneumonia, right lower lobe; congestion of left base. Gynecologic consultation, negative. Electrocardiogram normal.

Operation March 12 (spinal and ethylene). 9:40 A. M. to 1 P. M. Anesthesia had to be changed after abdomen was opened. No metastases to cul-de-sac. There were enlarged regional nodes and some nodes through the transverse mesocolon and the omentum. These were all excised. Triangular ligament of liver divided; liver retracted to right. Lesion involved entire cardiac end of the stomach and extended well down onto the antrum. Opening made into the pleural cavity. Splenectomy was done. Mass dissected free from pancreas together with all nodes which might be involved. End of

duodenum was closed. Subdiaphragmatic esophagus pulled down so that three to four inches were available for anastomosis. First part of jejunum was brought up through a rent in the transverse mesocolon and approximated to the esophagus. Enterostomostomy was then performed between the afferent and efferent loops of the jejunum. A Witzl type of enterostomy was performed distal to this in the jejunum for the purpose of feeding. Drains were inserted down to the esophagus. After the pyloric end of the stomach had been divided, the patient became very dyspneic. 800 c.c. of whole blood was transfused and just before conclusion of operation a second 400 c.c. of blood was given.

The stomach showed an ulcerated firm area four cm. in diameter on the lesser curvature just distal to the cardia. Around this the rugæ were thrown into thick high folds; the entire gastric wall throughout the proximal two thirds was abnormally thickened and indurated. The distal third of the stomach was thin and soft. The change appeared to be sharply demarcated. Section showed diffuse infiltration of the wall with undifferentiated epithelium. This change was present even down in the pylorus and at the outer end near the esophagus. Nodes from the splenic region, omentum, and the tail of the pancreas showed carcinoma. Other lymph nodes and the spleen were not involved.

March 13, complained of abdominal pain and difficult breathing. Given 1,000 c.c. ten per cent glucose and hypodermoclysis. Blood pressure 130/90. March 14, sharp pain in the region of the shoulder, interfering with breathing; condition not so good as the day before. March 15, blood pressure 130/76; respirations labored; temperature 104.4°; very poor condition; serosanguineous drainage from wound. Abdomen very tender to pressure. Dressing soaked with brownish serum with purulent odor. Rigidity of abdominal wall and rebound tenderness marked. Placed in oxygen tent; did not respond well; condition very critical. March 16, pulse imperceptible; breathing, Cheyne-Stokes. Heart stopped beating. Death, March 16, 7:15 A. M.

Occasional elevations of temperature to 99.6° before operation. Marked rise to 107° without any intermissions after operation (practically straight curve). Pulse 70 to 100 before operation; 80 to 160 after operation. Respirations 16 to 44.

Post-mortem report. The stomach has been described above. The anastomosis between the esophagus and the duodenum is intact; no leakage can be demonstrated. There is a generalized fibrino-purulent peritonitis. Acute hypostatic bronchopneumonia. Acute pleurisy. Cloudy swelling of the heart, liver, and kidneys. No tumor tissue can be found. The upper part of the uterus is absent (old operation).

Diagnosis. Generalized peritonitis following operation for carcinoma of the stomach.

Comment. Carcinoma of the cardiac portion of the stomach does not present the symptoms of obstruction which are encountered in carcinomas of the pyloric region. The course is much longer and is usually characterized by slowly progressive anemia and emaciation. The attempt at removing

carcinomas which have spread beyond the stomach is an heroic procedure, but it is the only chance which the surgeon can offer the patient.

Autopsy—30—363.

The case is that of a woman, 59 years old, admitted to the hospital February 5. She complained of a rapidly enlarging mass in the right thyroid region; difficulty in swallowing solid foods. About three years ago patient noticed a small mass the size of a walnut on the right side of the thyroid which was painless; it remained the same size until January 10, 1930, when it began to enlarge rapidly so that two weeks later it had doubled in size. January 25, she consulted an ear specialist and was told that her trouble was due to goiter. Thyroidectomy was done January 31, elsewhere. At the time of operation she had no pain in the thyroid region and no difficulty in swallowing. The operative scar healed in two weeks and patient was discharged without symptoms.

One week after going home another swelling appeared in the right thyroid region, and this time she began to have difficulty in swallowing solid food. Liquid foods did not bother her, nor did she experience difficulty in breathing.

An abdominal tumor weighing 16 lbs., of fleshy appearance, was removed two and one-half years ago because it made her short of breath. Father 83, living and well; mother 80, living and well; one brother living and well; two sisters living and well. No history of cancer in the family.

Physical examination showed a well developed, well nourished woman. Eyes, ears, and nose negative. Teeth out. Heart and lungs negative. Abdomen, old operation scar. Extremities normal. Urine, many white blood cells. Blood: hemoglobin 80 per cent; white cells 1,600; polymorphonuclears 73 per cent; lymphocytes 26 per cent.

X-ray, February 26, showed massive enlargement of the thyroid with compression and displacement of the trachea. Lungs negative. February 28, displacement of esophagus from enlarged thyroid.

Deep therapy. February 28, received 25 per cent FED on anterior thyroid field. Mass on right anterior aspect of neck very hard and extended from clavicle to angle of jaw. March second, patient developed dyspnea. Increased until about noon when she became cyanotic. Given morphin sulphate, gr. $\frac{1}{8}$, and then oxygen. Small reddish area 1.5 cm. in diameter just above incision in midline was increasing in size and appeared to fluctuate. March third, she was still under oxygen tent; breathing easily and feeling quite comfortable. March fifth, having respiratory difficulty. Said she could not swallow at all. Neck aspirated and about 15 c.c. of dark blood withdrawn. After the blood was taken out she breathed easier for about two hours; then was in the same condition as before. Later in the day 15 c.c. again aspirated from multiple small pockets, with practically no relief. Tracheotomy was considered but thought to be extremely difficult because of size of tumor. Later in the day she became unconscious. Temperature 97.6° to 101°;

average 99°. Pulse 80 to 120. Sharp terminal rise in pulse and temperature. Death March 6, 3:40 P. M. The tumor removed on January 31 showed a carcinoma of the thyroid.

Post-mortem report. Large soft, necrotic tumor of the thyroid with compression of the trachea. Microscopic examination shows carcinoma. Heart weighs 350 grams; no disease. Moderate atelectasis of the lungs; no pneumonia. No metastases are found.

Diagnosis. Carcinoma of the thyroid with compression of the trachea.

Comment. Carcinoma of the thyroid comprises from one per cent to two per cent of all goiters. The clinical features are rapid growth of the tumor and infiltration of the surrounding tissues. Very few well defined carcinomas of the thyroid are cured. The majority of reported cures deal with fetal adenomas which are regarded as showing malignant changes.

Autopsy—30—1504.

The case is that of a white man, 38 years of age, admitted to hospital October 8, 1930. He died three days later. At admission he complained of pain in the chest, especially on breathing; pain in the right hip; generalized weakness, particularly in the right leg and arm. In March, 1930, he noticed pain in his chest and a swollen left testicle. He saw a physician at this time, was taken to a hospital, and the testicle was removed. After two or three weeks he was discharged. He worked one month and during this time he was troubled with pain in the right chest. His case at this time was diagnosed as tuberculosis and he was sent to a sanatorium, from which he was discharged after ten days with report "no tuberculosis found." He was then hospitalized at another hospital and stayed there until the present admission. In the past four or five weeks he had developed pain in the right hip and weakness in the right leg and arm. His family stated that he had lost some weight, the exact amount not being known. For the past two months he had had considerable cough, raising some sputum. For two weeks before admission to the hospital, he had been raising blood in his sputum.

Before the onset of the present condition the patient was perfectly well. He had the usual childhood diseases consisting of measles, chickenpox, mumps, and whooping cough. He had also had diphtheria and smallpox. He was operated on in March, 1930, for herniotomy and removal of the left testicle. (Most of the history was obtained from members of the family, as the patient was unable to give it.)

Family history showed that two aunts of the patient died of cancer, one of cancer of the breast, the other of unknown location. The past history was essentially negative (generally and by systems) except for the development of pain and weakness in the right hip, leg, and arm. For the past two or three weeks his memory had been failing.

Examination revealed a white male, pale, very emaciated and somewhat dyspneic. He had considerable difficulty in moving his right arm and leg.

There were no eye findings. There was considerable lack of coöperation on the part of the patient. There was dullness over the whole right side with decreased breath sounds and increased voice sounds. There was increased tactile fremitus in that side. Blood pressure was 140/105 and the pulse was 122 and regular. The heart was considered negative. There was some rigidity over the entire abdomen, pain and tenderness over the upper abdomen. There was a scar in the left lower quadrant, due to herniotomy. No masses were palpable. The liver was not palpated. The left testicle was absent. Rectal examination negative. The muscles of the right leg and arm were flabby and there was a bed-sore on the right hip. The patient had a poor memory and was disoriented. Babinski positive on the right and negative on the left.

Urine: October 9, specific gravity 1026; acid; no sugar or albumin, numerous white blood cells in the sediment. Blood: October 8, hemoglobin 74 per cent; white cells 27,500; red cells 3,720,000; lymphocytes 13 per cent; polymorphonuclear leucocytes 87 per cent.

X-ray of chest and pelvis: multiple metastases of both lungs; pelvis negative.

Medications and procedures: zinc oxid dressings applied to the decubital ulcer on the right hip; morphin sulphate gr, 1/6 given repeatedly; s.s. enemas given; digalen 1 c.c. given; oxygen tent applied; digalen given repeatedly.

Nurses notes: at admission October 8, patient complained of severe pain in chest and right arm; seemed partially paralyzed; also hip; complained of pain in both legs. October 9, breathing quite labored; complained of pain and discomfort. October 10, severe dyspnea; unable to lie on his back or left side; irrational at times. October 11, very restless; perspiring freely; became incontinent; pulse irregular; exitus 4 P. M., October 11.

Post-mortem report. No edema; decubital ulcer over right posterior sacroiliac region. Lungs are filled throughout with carcinomatous masses varying from 4 mm. to 2.5 cm. in diameter. The heart weighs 300 grams; no disease. The spleen weighs 350 grams; filled with large tumor metastases. The liver weighs 2100 grams; extensive replacement by carcinomatous nodules. Mediastinal lymph nodes filled with carcinoma; abdominal nodes not involved. A large metastatic tumor 5 cm. in diameter involving the left cerebral hemisphere in the region of the fissure of Rolando. The right testis is normal.

Report on the testis removed in March, 1930, was malignant tumor of carcinomatous type.

Diagnosis. Metastases from a malignant tumor of the testis to the lungs, liver, spleen, mediastinal nodes, and brain.

Comment. Malignant tumors of the testis are usually of carcinomatous type and may appropriately be called carcinoma. They metastasize chiefly to the lungs and abdominal lymph nodes. The absence of metastases in the abdominal nodes is unusual. Metastases in the spleen are seldom seen. The weakness of the patient's right arm and leg was clearly due to the metastasis in the left cerebral hemisphere.

**NEWS ITEMS AND HEALTH ACTIVITIES OF
NORTH DAKOTA STATE DEPARTMENT OF HEALTH**

A. A. Whittemore, M.D., State Health Officer, Bismarck, N. D.

Viletta Roche, Director Bureau of Vital Statistics, Editor-in-chief, Bismarck, N. D.

Merry Christmas

The State Health Department wishes every reader a Merry Christmas and takes this opportunity to thank the physicians, health officers, and hospitals for the wonderful coöperation received during 1930, thus bringing to a close a successful year of work in public health.

A New Year's Resolution

"That every health officer, physician, nurse, and hospital attaché shall visit the State Health Department in 1931." The Department extends a cordial invitation. Come whenever the opportunity presents itself.

Airplane Questionnaires

In order to ascertain the safety index of airplane travel, to compile statistics, and for historical purposes, the Department recently sent out questionnaires to ascertain the number of North Dakota owned airplanes since 1910. The response has been excellent. Since there are no official records prior to 1928, the Department must rely upon volunteer information and will appreciate your contribution.

New Birth and Death Certificates

Let us again remind you that the new birth and death certificates are to be used exclusively after January 1. They are very complete, and, if correctly filled in, will save a lot of the correspondence and query necessitated by the old forms. No question will be allowed to go unanswered. The ever increasing demand by physicians, health officials, and industries to find out the relation between occupation and cause of death, prompted the new death certificate. Careful and complete answers to every question on the medical side of the certificate will save the physician endless query and annoyance.

Poliomyelitis

Poliomyelitis, of which so little is definitely known, has been epidemic in many sections of the United States during the past season and is fast becoming prevalent in North Dakota. From July 1 to November 1, twenty-one cases were reported to the State Health Department.

Early recognition by clinical symptoms, assisted by laboratory examination of the spinal fluid, is essential. During the acute stage, an increase is shown in the cell count, about 200 per c.m., which distinguishes infantile paralysis from cerebrospinal and other forms of meningitis.

Poliomyelitis antistreptococci serum, prepared according to the formulæ of Dr. E. C. Rosenow, for both preventative and therapeutic treatment, is obtained commercially. Some investigators are not in accord with its use. However, results have certainly followed its administration in many instances.

Serum should be administered in the preparalytic stage if possible. The Department is endeavoring to have a supply of convalescent blood serum, unobtainable commercially, prepared by the state laboratories for distribution to physicians at a nominal cost.

Convalescent serum is in all probability the more dependable and reliable of the two preparations, yet the nature of the product is such that the supply is limited. However, until we have a superior method, its use should be recommended.

Birth Registration Contest

Last year McKenzie County won the silver cup presented by the Department to the county showing the greatest improvement in birth registration. Will your county win it this year, or will McKenzie County continue to hold it? Every birth certificate counts. If you have any certificates which have not been sent in, send them in now. Or, if you are in doubt about having sent one in, write the Department. We will be glad to look it up. We will have the 1930 census upon which to figure 1930 birth rates and want to make a good showing.

Acknowledgement

This issue finds us at the end of seven years of work in the State Health Department. The Department has grown steadily despite financial handicaps. At no time since the establishment of the Department in 1923 has the State of North Dakota had the full burden of its support. For the organization, upkeep, growth, and expansion of the North Dakota State Department of Public Health, the Commonwealth of North Dakota is forever indebted to the International Health Board (Rockefeller Foundation); United States Public Health Service; Commonwealth Fund; American Child Health Association; and the Shepard-Towner Fund.

North Dakota Water and Sewerage Works Conference

The dates for this conference and short school have been set for December 8, 9, and 10, at Grand Forks. A number of papers touching upon a variety of subjects relating to water supply and sewage disposal problems will be read. Among the speakers will be Dr. G. A. Abbott, of the School of Chemistry; Dr. H. E. French, Dean of the Medical School; E. F. Chandler, Dean of the School of Engineering; and H. E. Simpson, Professor of Geology and State Water Geologist; all of the University of North Dakota. A number of out of town speakers are also included on the program. Health officers, city officials and especially those who are more directly connected with water supplies and sewerage works are invited to attend.

IS EVERY 1930 BABY REGISTERED?

THE JOURNAL-LANCET

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The Soo Railway Surgical Association
and The Sioux Valley Medical Association

MINNEAPOLIS, DECEMBER 1, 1930

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TREATMENT OF PNEUMONIA

Hardly any subject would appear to me more difficult to discuss before a body of physicians than the treatment of pneumonia; the multiplicity of the therapeutic measures combined with yearly and regional variation in morbidity and mortality rates makes evaluation of therapeutic procedures difficult.

Such a problem was given before the Post-graduate Medical Assembly to a great clinical teacher, Dr. Alvah H. Gordon, of Montreal, who summarized in a masterful way all that is valuable in old and new procedures of treatment. He could speak with authority before physicians because his scientific attitude never lowered its colors to blind or doubtful measures, and because his art never permitted the patient's welfare to be jeopardized by a meddling diagnostic and therapeutic procedure.

Attention was called to the possible value of antipneumococcus serum in types one and two, especially when given early; to the value of oxygen even supplied through a catheter when the signs of anoxemia are present, and to the value of digitalis only in cardiac failure when its rapid and sufficient exhibition should prevail. Fresh air except in the aged and debilitated patient was also recognized as adding to the respiratory comfort of the patient.

His emphasis of rest as the most important phase of treatment of pneumonia accords with common clinical experience, that the crucial point in management may be its simplicity with efficient nursing care, judicious use of opium derivatives and keenness in detection of complications, as empyema. The speaker doubted removal of a patient was ever justified in the later stages. Too often, for insufficient reasons, patients critically ill with pneumonia, have been removed to a hospital.

Finally there was the important emphasis upon the management of convalescence with appreciation of the profound toxemia that has existed. The physician's interest that has ceased when the temperature became normal, has terminated prematurely. To allow the patient, after a severe acute infection, time to restore the physiological equilibrium of his circulatory and nervous system by sufficient rest, may very reasonably be expected to lessen chances for the development of the vascular degenerative diseases. The increasing toll of human life from such sources challenges the physician and the propagandist back of the trenches, who attempts

to prevent disease by stimulating intelligent public health interest. The acute infections, including pneumonia, are worthy of more study concerning their relationship to the degenerative diseases of the later decades.

DEATH OF EMINENT BRITISH PHYSICIAN

Dame Mary Scharlieb, widely known British physician, died November 21, at the age of eighty five. Dame Scharlieb was a pioneer in her chosen field and won honors for her work in health service in India. The fact that she has been made a dame in England means a great deal. It expresses the distinction she achieved. Furthermore, her work in India has put an end, to a great extent, the prejudice that was felt against doctors of her sex.

Mary Scharlieb was born in 1845 and married a barrister practicing in India. She took an interest in medicine and attended the Madras Medical College, receiving a diploma in 1878. She continued her studies at the Royal Free Hospital and the School of Medicine for Women in London, and met with unlimited opposition because of her sex which was new in the field of medicine. She called at Buckingham Palace and made a plea to Queen Victoria and evoked her interest in the necessity of providing special medical service for the women of India. She became lecturer at the Madras Medical College and also became superintendent of the Royal Victoria Hospital for Caste and Goshia Women. She returned to England and became lecturer on forensic medicine at the Royal Free Hospital. Her outstanding success in the medical field made it impossible to withhold the medical degree any longer, and in May, 1889, she received an M.D. from the University of London. It was the first degree of that kind conferred on a woman. She was the first woman to take the London degree of Master of Surgery. A member of the Royal Commission on Venereal Diseases, she received the Commander Order of the British Empire for her services in 1916.

She eventually broke down in health in 1922, possibly from overwork. We know nothing about that, but it seems reasonable with all her activities and her many accomplishments that it would not be unlikely that she should overdo. The many distinctions that she attained in the face of so much prejudice and opposition causes us to pause and wonder at the courage and talent

that must have been hers. We think that a life of this kind is deserving of comment and admiration from all who know of her. Few men were so honored as she. In 1926 she was made a Dame of the British Empire and contributed many works to medical literature. The cause of death is given as heart disease, but we wonder if this heart lesion may not be but the outgrowth of overwork. We are inclined to think that with so much crowded into one life this might be but the natural result and consequently the end.

DR. JOHN A. LYG

John A. Lyng was born in the City of Namsos, Province of Trondhjem, Norway, December 25, 1864, one of the younger members of a family of several sons born to a cultured and well known family. He received his early education in the schools of Norway in keeping with the ideals and cultural traditions of the family.

He came to the United States as a young man and located in Minneapolis where he then had a brother. He entered and was graduated from the University of Minnesota Medical School. In 1890 he was licensed to the practice of medicine. He was employed as surgeon for the Soo Railway; and he served during the Spanish American War on the U. S. Army Medical Staff in Cuba. He established a successful medical practice at Alexandria and, later, Fergus Falls, Minn. He gained an enviable reputation in both places as a conscientious physician and a skillful surgeon.

Dr. Lyng had suffered from a heart lesion for a number of years. Recently the condition had become more grave, and on Saturday, September 18, 1930, death came very suddenly as he was about to enter his home, after having spent the day about town as usual. There had been nothing to give warning that the end was at hand. He is survived by his wife, formerly Else Froedtert of Milwaukee, a son John, and a brother living in Norway, as well as other more distant relatives.

He was a member of the American Medical Association, the Minnesota and Park Region Medical Society. He was a charter member of the Thulianian Club of the University of Minnesota, and a member of the Veterans of Foreign Wars, and for many years a member of Normands-Fordundet.

Dr. Lyng was keenly alive to the importance of keeping abreast with the advanced methods in the practice of medicine and surgery. He was widely travelled, having made, in all, fourteen trips abroad, where he availed himself of the study and observation that was at hand, and at the same time he enjoyed the beauty of European travel which he so well appreciated. He held diplomas in advanced studies from many foreign universities and clinics, including those in Paris, Berlin, Vienna and Edinburgh. He spoke German, French, Spanish and Norwegian fluently, and read Hebrew. He was a man of high culture and fine taste. He was a man whom few knew thoroughly, chiefly because of his great modesty. He was not inclined to tell or show his knowledge on a subject except as he saw a need for it. For this reason, much of the beauty and learning that he appreciated and understood was not brought to light except on long and close acquaintance. He was broadly educated in many fields and his interests were many. He was particularly thorough in his investigation of any subject of interest to him. He left nothing unanswered while he could find an answer. As late as 1927, together with Mrs. Lyng and their son John, he spent a year and a half in travel in the Near East and in Europe, where he enjoyed and studied those things that interested him so much.

His skill as a successful surgeon was well known to the medical profession; his opinion was always valued; and his honesty was known and appreciated.

NEWS ITEMS

Dr. L. J. Tiber, St. Paul, has disposed of his practice and is now located at Los Angeles, Calif.

Dr. T. E. Dredge, Sandstone, Minn., is now located at the Veterans Hospital, Dawson Springs, Ky.

Dr. D. Lemieux has moved from Bowman, N. D., to New England, N. D., where he will continue in general practice.

Dr. V. S. Ross, who for many years was in active practice at Sioux Falls, S. D., died recently at Washington, D. C.

Dr. E. L. Goss, Carrington, N. D., is now located at Belcourt, N. D., and is to continue in the practice of his profession.

Dr. E. C. Stone, Minot, N. D., will have to pay \$5,800 in a law case that he lost in court recently, for an injury caused by his auto.

Dr. S. Moske has sold his practice at New England, N. D., and moved to Hill City, Minn., where he will continue in general practice.

Dr. L. G. Rowntree, Rochester, Minn., claims a certain operation will change a cold and clammy hand to one of a warm handclasp.

Dr. N. D. Lees, who has been in practice at Minneapolis for the past few years, has moved to St. Paul and will continue general practice.

Dr. T. M. MacLachlan, who has been in active practice at Bismarck, for the past 25 years, has organized the Nature-Cure Clinic of that city.

Dr. W. A. Coventry, Duluth, attended the annual meeting of the American Obstetricians and Gynecologists held at Buffalo, N. Y., last month.

Dr. A. D. McCannel, Minot, N. D., spent a month at the eastern summer resorts during October. Mrs. McCannel was with him on the trip.

Dr. Herman Wicklund, Wildrose, N. D., suffered the loss of his right hand. He was changing tires on his auto when the accident occurred.

Dr. D. B. Pritchard, Winona, Minn., has announced that Dr. L. L. Younger, Chicago, will be associated with him in the general practice of medicine.

Dr. R. E. Hultkrans, formerly located at Rush City, Minn., has moved to Minneapolis and is now associated with Dr. George R. Dunn in general practice.

Dr. R. E. Woodworth, superintendent of the sanitarium at Sanator, S. D., was elected vice president of the National Conference recently held at Rockford, Ill.

Dr. C. E. Spicer, Valley City, N. D., attended the annual meeting of the American Academy of Eye, Ear, Nose and Throat specialists held at Chicago, last month.

Dr. Charles F. Remy, superintendent of the General Hospital, Minneapolis, reports an in-

crease of sixty beds, the result of rearranging the same at the hospital.

Dr. L. B. Wilson, Rochester, was among the principal speakers at the annual meeting of the American Society for the Control of Cancer, held in New York City last month.

Dr. G. J. McIntosh, Devils Lake, N. D., was exonerated in a \$30,000 suit brought against him. The Court would not even let it go to the jury, because of a lack of evidence being presented.

A new community hospital is to be erected at Vermillion, S. D., at a cost of \$100,000. One of its leading citizens who recently passed away left \$30,000 to be used in building this modern hospital.

Dr. John F. Miller, Andover, S. D., died last month at the Peabody Hospital at Webster. Dr. Miller was a graduate of the Medical University of Illinois, and was licensed to practice in South Dakota in 1907.

Dr. J. A. Myers, Minneapolis, presented a paper last month before the McLean County Medical Society in Bloomington, Ill., and also before the Illinois Tuberculosis Association in Jacksonville, Ill.

About one hundred members of the Southwestern Minnesota Medical Society held a special meeting at Worthington, Minn., last month, in honor of Dr. S. L. Sogge, president of the Minnesota State Society.

Dr. F. A. Swartwood, who has been in active practice at Waseca, Minn., for over forty years, died last month at the age of 70 years. His death was caused from heart trouble from which he had been a great sufferer during the past few years.

Dr. T. J. Murray, one of the leading pioneer physicians of Montana, died recently at the advanced age of 75 years. He had been in active practice for nearly fifty years, being very active in all medical organizations. He was the founder of the Murray Hospital at Butte.

The Southwestern Medical Society held their annual meeting recently at Heron Lake, Minn., and elected the following officers for the coming year: Dr. E. W. Arnold Adrian, president; Dr. S. A. Slater, Worthington, vice president; and Dr. E. G. McKeown, Pipestone, secretary.

Drs. A. M. Hanson and W. S. Nickerson, Faribault, were the winners in a \$50,000 suit brought against them by one of their patients for the amputation of a limb, the jury bringing in a verdict of no cause for action, as the doctors took the only step advisable to save the patient's life.

Dr. J. A. Myers, Minneapolis, a member of the Lancet editorial staff, put in a very busy day on November 14th, at Des Moines, Iowa, where he spoke before four organizations, the Iowa Tuberculosis Association, the Iowa Pediatric Association, the Des Moines Academy of Medicine, and the Polk County Medical Society.

Dr. Cora Johnstone Best, Minneapolis, internationally known lecturer, mountain climber and huntress, died at her home, following an illness that began several years ago while she was traveling in Switzerland. She was 38. Dr. Best was known throughout the United States as a conservationist and leading exponent of outdoor life.

Dr. F. W. Wittich, Minneapolis, conducted largely attended chest clinics for the McLeod County Public Health Association, October 30, and 31, which were more satisfactory than the usual chest clinics because a portable fluoroscope was used in all the examinations and much more definite information was obtained in a shorter time.

The officers of the South Dakota Health Association held their first meeting at Huron, S. D., last month and elected the following officers for the coming year: Dr. E. T. Ramsey, Clark, president; Dr. M. C. Johnson, Aberdeen, vice president; and Dr. A. E. Bostrom, Waubay, secretary. About forty members were present and an educational program was presented, which was discussed by all of the members.

President P. D. Peabody, Webster, and Secretary J. F. D. Cook, Langford, of the South Dakota State Medical Association were in Pierre last month and met with the members of the Fourth District Medical Society and Rosebud Society. Dr. C. E. Robbins, secretary of the Fourth District Medical Society, arranged an interesting program opening with a film on "Surgical Treatment of the Extremities," a banquet at the St. Charles Hotel, inspection of the new hospital building and an interesting clinic.

The following announcement of the removal of the offices from the Clinic building to the

new Sexton building, Aberdeen, will be of interest to the profession. Dr. R. G. Mayer for the past six years was in charge of the department of Urology and Dermatology in the Aberdeen Clinic and for four years Dr. J. L. Calene had charge of the department of Internal Medicine. Dr. R. D. Willson was head of the dental section for six years and Dr. C. B. Kelly was associated with the dental section for one year.

The official dedication of the new St. Mary's Hospital in Pierre, S. D., took place last month. Rev. Fr. Ignatius of Yankton, S. D., officiated at high mass at 10:00 in the morning. Hundreds of people inspected the new building during the afternoon and nearly 1,000 attended a banquet given by the Ladies Auxiliary in the evening. The new building has a capacity for 100 patients, is strictly modern and fireproof throughout and was built at a cost of over \$200,000.00. This improvement is a much needed one for the people of central South Dakota and will be greatly appreciated by them.

Elmer Mason entered a plea of guilty of practicing healing without a Basic Science certificate, before Judge Gates at Winona, Minn., last month. Mason was the ring leader of a group of Indian doctors who sold between four and five thousand dollars worth of Indian roots and herbs to the citizens of Fillmore and Houston Counties. Another member of the group has completed a sixty day sentence in the county jail of Houston County. Judge Gates, after hearing the facts in the case, sentenced Mason to serve three months at hard labor in Houston County. This sentence means that Mason will be put to work in the rock quarry where Houston County obtains the material for its roads. Sentences like this will go a long way toward preventing any return of quacks in that part of the state. Judge Gates is to be commended for his firmness in the disposition of this matter.

The sale of the Aberdeen Clinic by the R. L. Murdy estate to Dr. Hamline Mattson and Dr. H. R. Mahorner of Rochester, Minn., was recently announced. Drs. Mattson and Mahorner both are surgeons. They will have charge of the surgery department and will direct the clinic. Although the new owners have assumed control and are practicing in their new location, the formal opening will not take place until they have reorganized their departments and new heads arrive to take charge. Both of the new

doctors formerly were associated with the Mayo Clinic at Rochester and will install the system used in Rochester clinics. Under the new management the clinic will operate under five department heads as follows: surgery, internal medicine, obstetrics and gynecology, roentgenology, and eye, ear, nose and throat. The chief technician will be E. H. Erickson, for 13 years technician for the experimental institute of the Mayo Foundation. Miss Magdalena Schwartz, for many years in charge of the X-ray department, will remain in that capacity. Miss Dorothy Fawcett, Rochester, will be supervisor of the clinical laboratory. The purchase of the clinic will have no bearing on the administration of Lincoln Hospital, because the clinic is a separate corporation.

CLASSIFIED ADVERTISEMENTS

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Physician to do Locum Tenens for January and February. Everything furnished. Address 783, care of this office.

For Sale

Hanovia Luxor Quartz light. Used only a few hours. Original price \$315.00, for cash \$150.00. Address 778, care of this office.

For Sale

Practice in Eastern South Dakota. Home and office equipment for sale. Well worth looking into. Address 775, care of this office.

Technician at Liberty

X-ray technician, with two years clinic experience, wishes position in hospital, clinic or doctor's office. Good references. Address 756, care of this office.

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To take over lucrative unopposed general practice in Eastern South Dakota, for several months. Privilege of buying later. Address 769, care of this office.

For Sale

New Fischer Galvanic current generator, model 1200, complete, \$75.00. Universal Ophthalmometer, about like new, \$75.00. Address 784, care of this office.

Wanted

A first class Eye, Ear, Nose and Throat specialist to become associated with a group of physicians in Minneapolis. Overhead expenses on percentage basis. State age and place of special training. Address 782, care of this office.

Locum Tenens

Would like to take over practice in Minnesota, while owner is on vacation or rest. Willing to consider 50-50 on income. Eleven years experience. Scandinavian. Address 773, care of this office.

Position Wanted

Woman x-ray technician, age 29, completed nine months training in x-ray technique and four months hospital emergency experience at General Hospital, Minneapolis. Address 785, care of this office.

For Sale

Tice's loose leaf Practice of Medicine. Lewis' loose leaf Practice of Surgery. Both sets new, complete and up to date with three fold service on both. Address Dr. A. E. Arneson, Starbuck, Minn.

Locum Tenens Available

Recent graduate of University of Minnesota, one year of private practice. Ability, personality, appearance and character will satisfy the most critical. Will also consider permanent location. Address 777, care of this office.

Attention Eye and Ear Specialists

Having retired from practice, will sell my equipment of instruments, including Microscope, 3000 power, complete box case of operating instruments for diseases and deformities of the Eye, Ear, Nose and Throat, very cheap. All sterilized up to date, plated and ready. Phone Kenwood 0474, or address 2639 Humboldt Ave. So., Minneapolis.

For Sale

Stock, including Hanovia Sun Lamps, Diathermy, Surgical Instruments, Microscopes and other equipment for sale at a sacrifice. Sophia Hein, Executrix, estate of Frederick Hein. Address 219, S. Lexington Ave., St. Paul.

Experienced Technician


Capable young woman (28 years) wishes position as technician. Three and one-half years laboratory, x-ray, physiotherapy and general office experience. Two years clinical training. Very best references. Address 774, care of this office.

For Sale

Practice in central Minnesota, in richest farming community, without a crop failure. Nearly all gravel roads. Collections 95 per cent. Home and office fixtures for sale. Some cash required, balance on easy terms. Scandinavian preferred. Good reason for selling. Address 781, care of this office.

For Sale

General practice in modern North Dakota town. Large farming territory, 20 to 30 miles to nearest physician. Best schools and churches. All lines of business represented. Good drug store. Completely equipped office and five bed emergency hospital managed by nurse. Would like to dispose of office equipment and building. Part cash and easy terms. Unable to continue on account of loss of arm through accident. Address Dr. C. A. Wicklund, Wildrose, N. D.



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PUBLIC HEALTH*

By W. A. EVANS, M.D.

CHICAGO, ILLINOIS

I am sure that Dr. Pankow intended to be kindly, and that was the reason he omitted from my introduction the one thing that might have spoiled it all. He informed you that I am a member of this South Dakota Medical Association and also of the local medical society. Membership in these organizations does not imply competition. I am sure that you got from that an idea that I was not a competitor of yours for the loaves and fishes. He omitted to say that I am a legally licensed and qualified practitioner of medicine in the state of South Dakota, and likewise that I am liable to descend into your midst any day as an active competitor of yours.

I am not at all disturbed over the size of this audience. I have been talking public health to audiences for more than thirty years. As President of the Chicago Medical Society some thirty years ago I esteemed it a part of the duty of the medical profession, particularly through its organizations, to lead the public in matters of public health.

We were successful in materially increasing the membership of that Society, raising it from

a few hundred to a few thousand, inaugurating the principle of having branch medical societies meet at locations and hours convenient for the practicing physicians of the city, convenient to the neighborhood practitioners who wanted to attend, and yet who felt that they could not get much out of touch with their offices, and homes, and practices.

Of that we were proud, but we were more proud of the fact that we made the bulletin of that Society not a publication for the select few but a publication with a circulation list of many hundreds. We inaugurated public lectures, a policy that has, with some interruptions, been continued since. I believe that there is no medical society in the country that more fully appreciates the responsibility of the medical organization in informing and leading the public in matters of health.

In the course of something like thirty years I have spoken to all kinds of audiences. It has not been my experience that numbers, or even apparent enthusiasm for the moment, was a measure of the good accomplished or the influence which radiated.

I remember once attending two labor union meetings, one a meeting of the paperhangers and interior decorators, a meeting which was at-

*An address delivered at the meeting of the South Dakota State Medical Association, at Sioux Falls, S. D., May 21, 22, 1930.

tended with a great deal of enthusiasm, with wild applause and other emotional manifestations. In the more than thirty years that have elapsed since that time, I have never seen any evidence whatsoever that any good came from that meeting, a meeting that was crowded to the doors, in which the remarks of the speaker were received with every evidence of approval. Yet if from that there has ever come any good, I have never been able to determine it.

A little while later I went to a meeting of the brass polishers' association. I waited in a saloon below while they were holding their public meeting above. After a while they finished their business and asked me to come up. The speaker didn't leave his seat on the platform. Seated there in his shirt sleeves, he said, "Fellows, here is a man who thinks he has something you ought to know something about." With that introduction I proceeded to talk to that union.

I left that meeting thoroughly discouraged, feeling no good had been accomplished, feeling that my time and theirs had been wasted, that if I had any information to give them, it had not been received, that I had failed in awakening them to a sense of their responsibility. From no standpoint had there been any result of the meeting. Yet, while Commissioner of Health, I had four unions in my office to talk over with them the sickness rates and death rates of the members of those unions.

We finally reached the brass polishers' union. Their officer said, "You came before us two or three years ago. You told our fellows that we had more consumption than we ought to have. You convinced us that you were right. We want to say to these other unions here that what you are undertaking to do will have the solid and continuing support of the brass polishers' unions."

I remember once going out in the early days to talk on the subject of consumption in a neighborhood that Dr. Grosvenor knows something about. The meeting was held in a church. It was a bitterly cold night. There were about seven people in that church. Being cold, the janitor had to be there to keep the fires up. The preacher or the pastor of the church felt it was his duty to be there, and so he was there. The doctor responsible for the meeting was there, and he brought his wife along. There seemed to be just two people in that audience who were there from something other than a sense of duty.

One woman seemed quite interested. Her husband was not at all interested. She had to have an escort and she made him come along. As soon as I commenced to speak he fell asleep. Every time that I would look away from this pair, she would reach over and grab him by the sleeve and try to wake him up, but she didn't have many opportunities, for when there are but seven people in an audience, there are not many directions in which the speaker can look. So he slept rather continuously through my talk.

I have been my observation, many times verified, that there is no relationship between the size of the audience and the good that comes from what is said in the presence of that audience.

If somehow or other we can awaken some good woman or some good man to a sense of responsibility, if somehow or other we can cause to be born in a person an enthusiasm, a determination to do, more good will come from a meeting which in this direction succeeds than from any meeting in which there is a diffused enthusiasm.

I would rather, as a crusader for health and an old crusader for health, one who bears the scars of many battles, have come out of a meeting enthusiasm and determination, conviction of duty and of responsibility than to have success in any other direction, even though there be but one individual who is awakened to a sense of responsibility.

I understand that practically everybody here is a doctor or the wife of a doctor or closely related to doctors, so I am going to talk about public health from the standpoint of the practicing physician rather than from the standpoint of the public. It is with your point of view in mind that I shall present what I have to say. I am sure that you have the idea that the practice of medicine is an ancient and honorable calling, and it is, in a certain sense. Yet as an organized profession practicing medicine, as a part of medical machinery, you are not an ancient profession.

From the very beginning, in the nature of things, of course, there has been need for caring for the crippled, there has been need for caring for those who were stricken, from the days of the Garden of Eden on. It is impossible to conceive of a civilization or a society in which there were not people who were afflicted, in which there were not people who were in need

of succor, and, as a corollary, in which there were not other people who were giving that succor.

It follows that from the very beginning of society there has been something that constituted the antecedent impulse and the antecedent need of the practice of medicine; yet the organized practice of medicine is of comparatively recent origin.

Of course we had a legendary beginning. We had a legendary beginning with Æsculapius but wholly legendary, half mythical, half religious, for which there is perhaps something of a factor of substance, but nevertheless little more than a myth, a legend, or a tradition.

In a certain sense, our profession began with Hippocrates because of the fact that he organized the machinery of the practice of medicine. Often it has been interrupted, quite intermittent, for centuries ceasing to exist, and then coming into existence again,—no continuity of existence.

I doubt very much whether there has been continuity of the machinery of medicine beyond the days of Percival, and it began with the effort to adopt, by our profession and for our profession, a code of ethics, greatly misunderstood in all the ages and still very much misunderstood in its detail and in its philosophy, but it is nothing more than an expression of the principles around which the organization is built. There can never be much departure from those principles if the profession is to continue as such.

This movement beginning in England about one hundred years ago, in this country had its origin in all probability in a secret medical society, Kappa Lambda, organized in Transylvania University at Lexington, Kentucky, possibly in 1803 or 1804, extending to the great cities of the East in the late thirties just prior to 1840, and there revived, there generalized, there carried beyond the limits and confines of a secret society and made the guiding principle of a profession at large by its adoption by the New York State Medical Society as its code of ethics.

Presently, N. S. Davis, traveling from New York State and taking up his abode in the Middle West, made this code of ethics, originating perhaps with Percival, originating in America with Brown and with Kappa Lambda, fostered by the New York State Medical Society, the code of ethics of the American medical profession,

and that was less than one hundred years ago.

Therefore it is that organization as such, with its machinery, has had a continuous existence of not very much more than one hundred years.

The public health profession is younger still. It had its beginnings in England with Chadwick, who was investigating the condition of the English poor, and particularly of the London poor just one hundred years ago, laying down certain principles of community action for the promotion of health, based upon his studies of the method of living of the poor in London suburbs.

It originated in Germany still more recently with the philosophy of Pettenkofer, who enunciated a principle that disease was born in filth, that if men would be healthier they must be cleaner individually and cleaner in groups, and building a public health practice around improved water supplies and better disposal of sewage, better cleaning of streets, better cleaning of lots, or houses, and even of the bodies of individuals.

This beginning was less than one hundred years ago. The profession of public health is the junior of the profession of curative medicine. It is the child of the older profession. In a certain sense it is a part of that older profession, and then in a certain other sense it is a part from that older profession.

There is a danger that, in groups of individuals and in organizations that have work of so great similarity, where channels of activity run so parallel and in such close proximity each to the other, where objectives are so nearly the same, there will grow up friction between the different groups. So it is that there have been misunderstandings and friction between the profession of curative medicine, which is yours and which was mine in the earlier days of my professional life, and the profession of preventive medicine which has as its particular function the prevention of disease.

It is my purpose, in speaking to you here tonight, to remember that you are practicing curative medicine, that you have families for which you are responsible, to remember that you are somewhat ill at ease as to what is to be the future of your profession in this great age of flux, when the future is fraught with so much of uncertainty for all of us, for medical men as well as for ministers and for merchants, and as to the welfare of our country and the welfare of society.

It is my purpose to try to have you understand

as I believe that I understand, there is no need for friction or misunderstanding between the professions of curative medicine and the professions of preventive medicine, that the work is common work, that the duties are common duties, and there are ample rewards for all and larger rewards by pursuance of a policy of coöperation than there are by the pursuance of one of antagonism or opposition.

I think we have reason to be proud of what public health has done for the people. If you will pardon me, I will make my points by citing Chicago experiences, not that they are better than other experiences or that they differ radically from other experiences. They happen to be experiences that I have had some contact with, that I know something about, and concerning which I can speak with some degree of authority. I feel that they are experiences that I have had enough to do with so that I may substantiate what I say, that I am in a position to prove what I claim. It is for these reasons that I use them.

When we began, Chicago had a typhoid death rate of 176. We now are inviting or preparing to invite the people to come to a World's Fair in 1933 to celebrate the one hundredth anniversary of Chicago as a village. From 1891 to 1893, when we were preparing to invite the people to come to the World's Fair of that period, we were told that people dare not come because, amongst other things, of the high mortality rate from typhoid fever that then prevailed. At its maximum it was approximately 176. It is now less than one. It has been about one for more than ten years. I submit that a department of government that can reduce a typhoid death rate from 176 to 1 has made good. I submit that an organization of society that could remove that menace to human health and to human life and to human welfare has justified its existence, and there is little that man can offer in comparison in any other field of social activity.

Another illustration, if you please: At its very worst we had a consumption death rate of 300. At the present time we have a consumption death rate of approximately 75. I am not going to take your time to develop the technical meaning of these terms. That is beside the question. The argument that I offer is that in the control of this most uncontrollable disease, a disease that runs into the home, into the lives of people, a disease that we earn by our wrong living, a

disease that society earns for itself and escape from which it must likewise earn, a disease from which we escape individually by no royal road, by no magic, by no antitoxin, a disease from which we escape individually or collectively by the slow, hard grind of living right instead of living wrong, therefore, a hard disease to control, demanding, as it does, an entire remaking of our methods of living in certain directions. In less than fifty years we have made life four times as safe against this dread disease as it was at the beginning of that period.

I submit that an organization that could render that service to society deserves better of society than does its machinery for the administration of law or justice or any other part of the social machinery.

At its very worst, in certain parts of Chicago at least, we had a baby mortality of approximately 300, not for the entire city or for a long period. That represents, of course, the very worst, as I have already said. Now we have it somewhere about 75.

I remember about ten years ago when Truby King passed through the United States, traveling from New Zealand to England, men were falling on the battlefields of Europe. England was being decimated of its flower. Those who prayed for the perpetuity of the English race saw the need, if the traditions of the people were to be carried on, that their baby lives should be saved. They sent to New Zealand for Truby King to come there and tell them how he and his people and his movement had saved the lives of babies for the people of New Zealand, to the end that English civilization and English manhood might not be wiped from the face of the earth.

As he passed across these United States from west to east, he stopped to tell us his story. He told us that they had an infant mortality rate of 50. He told us that at a time when the American remember how we reacted emotionally to the infant mortality rate was well over 100. I can remember how we reacted emotionally to the information that he was giving us, how fortunate were the people of New Zealand—with their equable climate and their homogeneous population, with almost nothing of poverty, with people speaking but one language,—how fortunate were they and how well expressed was their good fortune in the safety of the lives of their babies, and how unattainable was this goal for the babies of America.

That was about 1915 or 1916. Yet in 1929 from all parts of the United States there came reports of individual cities with baby death rates of less than 50, and a moderate number with baby death rates of less than 30, and three or four with baby death rates of somewhere about 12, and a baby death rate for the country at large that was well below 100, in spite of the fact that our population is from many lands; that we have no homogeneity of population. There are many things that make against the welfare of babies in this land of ours. If we had done nothing else except make baby life safer than it was, we would deserve the best at the hands of American society.

These illustrations might be increased quite numerously. I might even tell you of diseases that but a few years ago periodically threatened our very existence, of how cholera a half century ago or a little more, periodically swept up and down this Mississippi Valley, of how yellow fever reached its long and gaunt arm from Havana in the Caribbean and touched our cities as far north as Portland, Maine, and wherever it was, all human effort was paralyzed. The machinery of society failed to turn. There was no commerce; there was no manufacture; there was no production. Our people were paralyzed and prostrate. We have no such epidemics now. It has been a long, long time since we have had a paralyzing epidemic in this country.

Now let us use another type of illustration. We read that the span of human life has been increased from somewhere about 33 years. Using rather roughly and inaccurately the average age at death as the span of human life, as I have said quite inaccurately but nevertheless indicative of the point that I am now going to make, it was once somewhere about 33 years if we go back not so very long ago, and it is now about 60 years. I am sure that sounds rather statistical, and as a statement, leaves you rather cold. Yet let us see what it means in certain directions.

We spend about twenty years in training the human machine for the work of life, about twenty years in building it up, in training its muscles, in training its mind, about twenty years and much of money and effort in building a machine to function for the family, for the individual and for society. Under the old dispensation, that machine functioned for about thirteen years and then was scrapped.

I suggest that there is no logic, there is no

common sense, in spending twenty years at the building of any machine and getting from that machine only thirteen years of activity and of use. It isn't logical. It would not succeed as a business proposition in any manufacturing enterprise or any other kind of enterprise; yet it was the very core of our social method not many decades ago.

Now we spend something like twenty years in rearing a child, in gaining for that child its physical development and its training of mind and hand, and then we get therefrom almost forty years of service. That is logical. What does that mean in finances? What does that mean in national wealth, in family wealth, in the wealth of the individual? We spend about twenty years in preparing for parenthood, and then somewhere about twenty years of age we marry and beget children, and begin to train those children to carry on in the world.

Under the old order, the average age of the eldest child, therefore, when the head of the family died, was just thirteen years, and the other children were younger in proportion. That meant orphan asylums. That meant the need of a great machinery for caring for broken homes, a great machinery to care for children that had no opportunities of home training or of preparation for life. Now the average age of the eldest member of the family is approximately forty years. What does that mean for the security of the family? What does that mean for the preparation of children for the responsibilities of life?

Illustrations of these various sorts might be multiplied almost indefinitely. I suggest that nothing that we do as members of the social fabric, nothing that we do as part of the social organization, can make a showing that is in any way comparable with the showing that we can make in public health.

We have made good in public health. We have rendered return for every dollar that was invested in the maintenance of public health machinery. Whether it be in Panama, in Cuba, in the Philippines, in Sioux Falls, in Chicago, or in Washington, the money that society has invested in public health has rendered returns.

Compare it, if you please, with no disrespect whatever to our police machinery. Are the streets safer than they were fifty years ago, in the same proportion? Is the administration of justice better than it was fifty years ago, in the same proportion? I refer to our judges and our courts and other agencies of law. How about

our fire department?

The reason for the showing that we are able to make is that we have adopted a policy of prevention, and wherever we have found any agency of any kind that could be advantageously employed for the protection of society, for the protection of human lives or the protection of business, we have, without hesitation, taken what we found. If embryology had something to offer, we commandeered that. If bacteriology had an offering that could be made use of for the protection of people against disease, we have commandeered that. Nursing, sanitary engineering, social science, wherever there was anything that could be employed for the betterment of man, it has been made use of by those who are working in preventive medicine, with the results that have already been developed.

I am sure there are men who are practicing medicine who, while they recognize the general truth, have been made somewhat uneasy thereby. While they recognize that it has all been for the general good, while it has meant that society has been safer and life has been safer and more comfortable, at the same time they have had some misgivings as to just what was their relation to it and just what should be their attitude toward it as the thing went on.

They have figured that if this thing could be done with typhoid fever that it could be done with other diseases. They have figured if losses have resulted from the partial elimination of consumption that there would be losses to them in the further elimination of this disease and in the elimination of other diseases. I am sure that level headed, common sense men, men who think straight, men who see clearly, are not infrequently of the opinion that to go on with this movement is not consistent with their duty toward their wives, their families and their own future.

I have been thinking about this thing for about forty years. I was first associated with public health work in the yellow fever epidemic in the late eighties. I became health commissioner of Chicago about twenty-five years ago. I claim, and I believe that the claim can be justified, a considerable part of the responsibility for the better organization of the best organized local medical society in the world, to wit: the Chicago Medical Society. I merely mention all of this as indicative of the fact that I have had reason to think these questions to their ultimate, I have had reason to think these questions beyond the

ordinary horizon. I am going to tell you what my thoughts have been, in a plain and practical and, I trust, common-sense, and, I hope, convincing way.

I am sure that some of you have been disturbed by that which has been held before us as the bogy of state medicine. There are those who know of the experiences of Germany with state medicine prior to 1911 and since, and the experiences of Great Britain with state medicine since 1911. You have felt that particular machinery should be avoided in the interests of the profession in this country if there was any way in which it could be avoided.

I do not believe that I need argue in this presence that the people are going to demand better health standards. I do not believe that I need to argue in this presence that the people in the long run and in the ultimate are not going to be satisfied with the prevalence of any preventable disease which is not prevented, and that ultimately they are going to demand that somewhere in the machinery of society there be created and maintained something that will do much, as much for them as regards other preventable diseases as has been done for them in regard to typhoid fever.

I think we can accept that as a need of no especial arguing. The only question that comes is this: When the cry goes up from Macedonia, when the people call for relief, what will be the answer of my profession to that call? I do not believe that they can afford to have the people think of the medical profession as other than the great agency created for society, for the physical benefit or betterment of the members of society. I do not believe that they have reasoned narrowly. I do not believe that they will accept subterfuges, but they will demand protection, and if they can't get it from the medical profession, they will suffer to be built up other machinery to supply them with what they are in need of.

We have had their confidence in an unorganized way since the beginning of time, in an organized way for one hundred years, and I don't believe that we can afford to forfeit their confidence. They expect certain things of us, and I don't believe that we can afford to disappoint them in their expectation. I don't believe that our profession can afford to maintain or attempt to maintain any other position than that we are the army of society, that we are the machinery of society for the conservation of health in all

of its ramifications. That is a responsibility that society charges us with, and we cannot afford to abrogate, for it would be abrogation. We cannot afford to abrogate that opportunity and that responsibility. We cannot afford to have them think for a moment that there are other saviors or other servants that should be developed to care for them in this field or in this hour of need. That is but a part of the question.

Now, if you please, let me argue somewhat more narrowly. Let me pass from what might be termed glittering generalities and abstract principles, to things that are more concrete. I think we can recognize as a fact that we lost financially as a result of the control or elimination of certain diseases. These losses are comparatively easily seen, appreciated and valued. A doctor can turn to his account books and find that whereas once he made considerable money from the treatment of malaria, there is no longer malaria to treat, and therefore there is loss. He once made considerable money from the treatment of typhoid. There is now but little typhoid to treat, and the result is loss.

The books on these diseases are comparatively easily scanned, easily analyzed and easily understood. The losses are pragmatic and easily appreciated. Are there any gains? It is my contention that the medical profession never in its history has been as prosperous as it is today. Never in the history of medicine have medical men been as prosperous, in as easy circumstances, able to care for their families as well, protect them against the vicissitudes of life, prepare their children for the duties of life, educate and train them, as today.

How can we reconcile the fact that all these diseases have been eliminated, these various sources of revenue have been wiped off the slate? How can we reconcile that with a relatively prosperous profession? There is no difficulty whatsoever. I think if you will look back over our own experience you will find that for every opportunity for revenue that has been lost by this control of preventable disease, there has been increased revenue from elevated standards of health, from dissatisfaction with health standards and comfort standards, with which but a while ago people were thoroughly satisfied, or if they were not satisfied did not make their dissatisfaction manifest. Their dissatisfaction did not lead to effort because of the fact that they knew in many instances, at least, of no way in which bad conditions could be improved.

I tell you that the great and far reaching effect of public health work, the striking accomplishments of public health work, have not lain in the field of individual diseases.

I called your attention a while ago to the fact that consumption was once four times as prevalent as it is now. We have waged great campaigns and warfares against consumption, but we have merely used consumption as our slogan. It has been the word that has been painted on the banners under which we fought, but we cared little for consumption. Consumption really meant nothing more than that kind of health that men had earned by living wrong. The great end and objective that we had in mind was to make people know how to live differently, and, knowing how, to put that knowledge into action, to make such changes in habit and in custom as would earn freedom from that disease.

We fought great battles against typhoid fever, but typhoid fever was merely the slogan under which we fought. It was nothing more than the banner that we used for the host to rally around. The great idea that we had in mind was that men were drinking filth, that men were eating filth, that low standards of sanitation prevailed, and that we would raise those standards.

Had we struck at consumption and consumption alone, at consumption as an entity, aside from the menu of life, aside from the habits and customs and from the environmental influences that make consumption possible, even if we struck at this disease in such a way as to have wiped it out as a disease, something else would have taken its place. Some other disease of equal content, or equal portent, would have come in and taken the place of this one disease, the product of its environment.

Had we struck at typhoid fever alone and left polluted water supplies to one side, left uncontrolled sewage and flies and other filthy habits of life to one side, we might have controlled typhoid fever. But some other disease, a product of that environment and the result of those causes, would have come into being to take its place. We would have done nothing more than to swap one name or one disorder for another of equal consequence.

But what we had in mind was this: Men were living on a low plane of social existence. We proposed to raise them up to the point where they would have no typhoid, because they deserved no typhoid, where they would have no consump-

tion because they deserved no consumption. The real purpose of it all, and the real objective of it all was higher standards of community life and higher standards of family life and higher standards of individual life.

This can be brought home to the individual. What we are constantly doing is to try to convince the people of the fact that their standards of health alone, the standards of health with which they are satisfied, the standards of capacity, of efficiency, of productivity, the standards of comfort and of ease, even the standards of relief from pain that the people of Sioux Falls are satisfied with tonight, are not the standards that this American people should be satisfied with. The great and fundamental importance of all public health work is to make people dissatisfied with low health standards. Just in such logical dissatisfaction lies the greatest opportunity for reward for the members of the medical profession. Assuming that you are trained to serve, assuming that you are capable of rendering the service that the people want, as soon as the people recognize that want, as soon as the people are asking for relief, that you and you alone are trained to give that relief—assuming this to be true, there is prospect of more work, more remunerative work and more satisfactory work for the members of the profession of curative medicine than there ever has been in human history.

There is a horizon of medical possibilities that we cannot encompass in our dreams. For every pragmatic loss that ensues by reason of better health consciousness, of higher health standards, there are a dozen pragmatic gains, and just as pragmatic and just as common sense as any loss could be, even though not so easily appreciated, not so easily seen, and especially not so easily foreseen.

I think I will give you just one illustration. I came into the practice of medicine at a period when there was practically no eye work. When I was a medical student we had one man teaching this as a specialty. He received no attention from members of the student body, was thoroughly unappreciated, did not register with the students at all. I think I am justified in saying that he was scarcely respected by the student body. At that period the very core of our profession was the idea that we existed for the relief of human suffering, and that that was the limitation of that which was expected of us. We were a profession which,

since the very beginnings of our organization, had existed to relieve human suffering. It was the principle that constituted the cornerstone upon which we had built, and there was no other.

Here came a new part of the medical profession that did not comport with that principle, a new development of the profession that was setting itself to do work that had to do with the promotion of efficiency and practically not at all with the relief of suffering. Probably at that time when a man reached forty years of age and was developing presbyopia, could only half see, he accepted that as inevitable. From that time on he shaped his life on that expectation. He forewent the work that required better sight. He limited his activities. He limited his hopes and his aspirations. He was but half a man from then on and could do only a half man's work, and he accepted it as patiently and as resignedly as he knew how, and his family accepted the decreased revenue on the same basis of expectation.

Then came this branch of the profession almost in disrepute, catering to what? To human efficiency, not to the relief of suffering; not to succor, but to the promotion of human efficiency. It served society how? By almost doubling the span of useful life of a large part of the membership of society. That was worth while, and the very best possible proof that it was worth while is the fact that that branch of our profession has been rewarded for rendering that service, the first branch of our service that passed from a basis of relief, of succor, to the promotion of human efficiency.

The percentage of people who are in need of succor, in the last analysis, is comparatively small, but the percentage of people who work at low efficiency, who consciously or unconsciously tonight are less efficient or less capable than they formerly were, is enormously high. When they come to recognize increased efficiency to the end of their lives, increased possibilities to the end of their lives, and, recognizing that, demand of the machinery of society that the service should be rendered, and when the medical profession is ready to render that service, what are the possibilities of monetary reward?

My argument, in summary, is this: Public health has accepted a certain responsibility. It has undertaken the doing of certain things. It has rendered service where the community has asked for service. The best possible future for

the membership of the cult of curative medicine is to accept their part of the responsibility, to practice preventive medicine as a part of their daily duty of the practice of curative medicine, to lend their aid to the promotion of all public health work, to take their places shoulder to shoulder in the social fabric with the men who are doing public health work. In that there lies the largest possibility of the continued welfare of the profession of medicine.

Furthermore, in this way and in this way only (and I say it with all the emphasis that I can command) is there possibility of escape for the people of our country, people as well as physicians, from the unfortunate development of state medicine that is so much in evidence in European countries.

I say that it reflects but little credit on our profession, our statesmen, or our public thinkers, if we, with the warning of experience that has come to us from Germany and England, do not now so shape our course as to avoid the pitfalls into which they have fallen, as to avoid the development of a social machinery similar to that which has been unsatisfactory even to them and would be more unsatisfactory to us.

Will you permit me to hold you just for a moment longer and say something to you about your own state? I refer particularly to the state of South Dakota. The very fundamental of public health work is bookkeeping. We cannot intelligently plan campaigns for the control of any disease until we know of the ravages of that disease. We cannot intelligently launch a plan against an enemy until we know all that can be known about that enemy.

In the field of public health this goes by the name of vital statistics. We have in this country what is known as the registration area. I am not going to take your time to develop the technical side of that. It was developed, thought out, and planned by the national government. It was an effort on the part of the national government to collect in all parts of the country, or to promote the collection by the people in all parts of the country, facts relative to the prevalence of disease, fatal and otherwise, of births and of deaths in the different states of the Union.

The advantage of the plan is that the method is uniform in New York, in Massachusetts, in Minnesota, in California, and in Mississippi. In consequence of the uniformity, comparisons can be made. They have established what is known

as the registration area. They have adopted a slogan, and that slogan is that in the year 1930 every state in the Union would be in the registration area. It is too late now to talk about the details of that plan. Those details have been thought out years ago. They have been given very careful consideration. They have been changed back and forth. They have been crystallized into a definite standard that is about as definite as a pound weight or a yardstick.

It happens that there are about four states in the Union that have not come into the registration area, and South Dakota is one of the few. When there are published maps showing public health work and the state of health in this country, when there are shown maps that set forth the facts that are to be found in this registration area, the state of South Dakota is one of the states that is painted black. That ought to be changed. It will never be changed until the people of South Dakota say that it has got to be changed. It isn't going to be changed automatically. It is not to be changed by any magic. It can't even be changed by your state health officers. If it is to be changed at all, it is because the people of South Dakota say that it is a stigma on their state, say that, in the eyes of the people, their state is disgraced, and they propose that that disgrace shall be removed. The movement might very well start in Sioux Falls. Nothing more fortunate could happen than that out of this meeting tonight, the beginnings of which have been said to be inauspicious, there should be born an enthusiasm mingled with determination and mingled with persistence that would not rest or quit or be satisfied until this mark was no longer registered against South Dakota.

For a number of years there have been studies by the public health authorities, those in public life, and by various philanthropic agencies, as to what is the best unit for the doing of public health work. Our public health work has begun, naturally, in our great city health department, and there its benefits are best observed. There it has been easier to see that they have made returns in safety of baby lives, in safety of lives at all age periods, for the expenditure of money, of effort and of influence. But the city is not the best unit, as these people have concluded. The best unit is the county. The best health department to serve all the people is the county health department organized just as efficiently as your sheriff's office, just as

efficiently as your courts, as your departments for keeping records, your probate and other clerks for the registering of lands and of other properties, organized on the basis of the county as a unit.

There was a time when there was considerable of individuality to the city. There was a time when the political limitations of a city meant something. They don't mean anything any more. There was a time when we could stop a health activity at the city limits and get somewhere with it. We can't do that any more. Telephones and good roads and automobiles, methods of communication and of contact have brought to an end the day when the city was the proper unit.

I hope that this State Medical Society, the people of this community, will begin work and continue at work to put over in South Dakota county health departments, and that you will not stop until there is in every county a well organized health department to bring to the people of that county, in city and in country,

the benefits that experience has shown follow efficient health department work.

One state in this northern section, Ohio, has a county health department in nearly every county in the state. Several of the southern states have county health departments in nearly every county. I don't believe it is to your credit that such should not be the condition of affairs in the state of South Dakota. I don't believe that the South Dakota State Medical Society will stop until, through their influence with the general public, there has been developed in every county in the state of South Dakota a well organized, efficient county health department.

I am very much obliged to you for having listened so patiently to this perhaps rather too plain speaking. I have tried to appeal to no sentiment, to appeal to nothing except your common sense. I have tried to appeal to nothing except your judgment and your reason. I thank you for the patience and the attention that you have given to this appeal.

THE PATIENT'S OUTLOOK IN HYPERTENSION*

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To see a relatively young man of forty, full of life and energy, and on the threshold of his productivity develop an increasing and unremitting hypertension, and die within a year or two in uremic coma, is to witness one of life's unavoidable tragedies.

The sequence of symptoms that usually lead up to such an early death are as follows: morning headaches, dizziness, insomnia, nervousness, irritability and apprehension, together with failure of memory and decreased ability to concentrate. These manifestations are accompanied by palpitation, breathlessness, easy exhaustion, loss of appetite and the appearance of symptoms of gastrointestinal dysfunction. Later other symptoms occur, such as rapidly failing

vision, and the nocturia, polyuria, anemia and weight loss of the chronic uremic state.

This is the picture of the severe, progressive form of hypertension. Fortunately, it represents only a small fraction of the total hypertension cases that we see. A more hopeful aspect to hypertension is illustrated by the material which I wish to present to you.

In assembling the clinical data used in this discussion, I decided to use only the patients seen at the Nicollet Clinic from January 21, 1921 to January 1, 1926, on whom the diagnosis of vascular or arterial hypertension was made. Secondary hypertension cases were not included. The minimum interval of the time elapsing since these patients were first seen is four years, and the maximum, nine years, except in a small number of cases. In the latter cases I was able

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to obtain clinical records a few years prior to 1921. There were 409 patients with this diagnosis in our files. Twenty, a relatively small number, have been continuously followed since they were first observed to the present time, and 389 were sent questionnaires. From these replies and from our own records we are able to tabulate data on 100 living patients and sixty-nine who have died. We know of ten other deaths, but have no dates or other information concerning them. In these cases the questionnaires were returned with the postal notation "deceased." The living and dead cases have been grouped according to the level of the systolic blood pressure on the first examination.

TABLE I
Patients with Systolic BP 150-169
Living, 20; Dead, 8

Living: M., 10; F., 10; Avg. age, 47.				
Hypertens. sympt. and signs on first observ.	None	Cerebral	Cardiac	Kidney
Symptoms last report	5	10	10	1
Not reporting, 1	9	6	5	3
Reporting recent BP, 10: increased, 6; decreased, 4.				
Dead: M., 1; F., 7; Avg. age, 52.				
Patient showing marked symptoms and signs		Cerebral	Cardiac	Kidney
Types of death: cerebral (2), cardiac (3), cerebral and cardiac (1), cancer (1).		2	4	0
Duration of life after first observ., 2 yr. 9 mo.				
Same excluding patient living less than one mo., 3 yr. 2 mo.				

In this group nine patients had no symptoms when last reporting; four had lost their cerebral symptoms, and five their cardiac symptoms. Out of the patients reporting, six had increased, and four decreased blood pressure. Failure of the heart was responsible for death in four out of eight patients who died.

TABLE II
Patients with Systolic BP 170-189
Living, 34; Dead, 16

Living: M., 8; F., 26; Avg. age, 55.				
Hypertens. sympt. and signs on first observ.	None	Cerebral	Cardiac	Kidney
Symptoms last report	12	14	18	1
Not reporting, 1	13	9	14	12
Reporting recent BP, 22: increased, 8; decreased, 14.				
Dead: M., 10; F., 6; Avg. age, 59.				
Patient showing marked symptoms and signs		Cerebral	Cardiac	Kidney
Types of death: cerebral (4), cardiac (5), kidney(1), cardiac and kidney (1), cerebral, cardiac and kidney (2).		6	5	6
Not reporting, 3.				
Duration of life after first observ., 2 yr. 3 mo.				
Same excluding patient living less than one mo., 2 yr. 3 mo.				

About forty per cent in this group have no symptoms, and five and four patients respectively show a disappearance of cerebral and cardiac symptoms. There is a marked increase in the kidney symptoms (nocturia), but this is a symptom that is difficult to evaluate, and in the sixth decade is often due to other causes. Of twenty-two reporting, eight cases show an increased, and fourteen a decreased blood pressure, which is a very satisfactory showing. There are more living females and more dead males in this group, and from now on the females have a decided advantage. The clinical impression that females tolerate hypertension better than males is supported by this study. The heart again is wholly, or in part, responsible for half of the deaths.

TABLE III
Patients with Systolic BP 190-209
Living, 23; Dead, 14

Living: M., 3; F., 20; Avg. age, 56.				
Hypertens. sympt. and signs on first observ.	None	Cerebral	Cardiac	Kidney
Symptoms last report	5	15	11	5
Not reporting, 1	8	9	9	9
Reporting recent BP, 16: increased, 7; decreased, 9.				
Dead: M., 7; F., 7; Avg. age, 59.				
Patient showing marked symptoms and signs		Cerebral	Cardiac	Kidney
Types of death: cerebral (1), cardiac (7), cardiac and kidney (1).		4	8	0
Not reporting (1), Diabetes (1), Pernic. anem. (1), Pneumonia (1), Fract. hip (1).				
Duration of life after first observ., 2 yr. 6 mo.				
Same excluding patients living less than 1 mo., 2 yr. 11 mo.				

It is rather remarkable that with a "200" systolic pressure one third of this group of patients have no symptoms referable to hypertension. Six and two, respectively, show a disappearance of cerebral and cardiac symptoms. Of sixteen reporting, seven have increased and nine decreased blood pressure. Only one of fourteen patients died of a cerebral accident, and seven died a cardiac, and one a cardiac and renal death.

TABLE IV
Patients with Systolic BP 210-229
Living, 16; Dead, 18

Living: M., 3; F., 13; Avg. age, 56.				
Hypertens. sympt. and signs on first observ.	None	Cerebral	Cardiac	Kidney
Symptoms last report	2	10	6	5
Not reporting, 1	3	11	9	9
Reporting recent BP, 6: increased, 1; decreased, 5.				
Dead: M., 10; F., 8; Avg. age, 64.				
Patient showing marked symptoms and signs		Cerebral	Cardiac	Kidney
		4	7	5

Types of deaths: cerebral (6), cardiac (6), kidney (2), cardiac and kidney (3).

Not reporting, 1

Duration of life after first observ., 3 yr. 1 mo.

Same excluding patient living less than one mo., 3 yr. 6 mo.

At this level of systolic blood pressure, the dead exceed in number the living patients. The living also begin to show lack of toleration or compensation for hypertension. Out of six reporting, one shows increased and five decreased blood pressure. There is an increase in cerebral deaths, but the heart is still a factor in fifty per cent of the deaths.

TABLE V

Patients with Systolic BP 230-249
Living, 4; Dead, 6

Living: M., 0; F., 4; Avg. age, 65½.				
Hypertens. sympt. and signs on first observ.	None	Cerebral	Cardiac	Kidney
	1	1	3	0
Symptoms last report	2	1	1	2
Reporting recent BP, 2: increased, 1; decreased, 1.				

Dead: M., 2; F., 4; Avg. age, 58.

Patient showing marked symptoms and signs	Cerebral	Cardiac	Kidney
	3	3	0
Types of death: cerebral (1), cardiac (3), kidney (2).			
Duration of life after first observ., 3 yr. 4 mo.			

Two patients in this group do not admit having symptoms referable to hypertension, and out of two reporting recent blood pressure, one shows increased and one decreased blood pressure. The heart is again responsible for half of the deaths. The duration of life after first observation is three years and four months. This fact should act as a brake to any one inclined to hasty and unguarded prognoses.

TABLE VI

Patients with Systolic BP 250-269
Living, 3; Dead, 5

Living: M., 1; F., 2; Avg. age, 46.				
Hypertens. sympt. and signs on first observ.	None	Cerebral	Cardiac	Kidney
	0	2	0	0
Symptoms last report		1	2	1
Reporting recent BP, 2: increased, 0; decreased, 2.				

Dead: M., 3; F., 2; Avg. age, 49.

Patient showing marked symptoms and signs	Cerebral	Cardiac	Kidney
	4	2	1
Types of death: cerebral (3), cardiac and kidney (2).			
Duration of life after first observ., 2 yr. 5 mo.			

This small group is a remarkable one in that three patients with a systolic blood pressure above 250 are still living, and two out of three report a decreased blood pressure. One patient lost his cerebral symptoms. Death due to cerebral accident predominates for the first time.

TABLE VII

Patients with Systolic BP 270-290
Living, 0; Dead, 3

Dead: M., 1; F., 2; Avg. age, 50.			
Patient showing marked symptoms and signs	Cerebral	Cardiac	Kidney
	1	1	1
Type of death: two (1).			
Not reporting, 1			
Duration of life after first observ., 2 yr. 1 mo.			
Same excluding patient living less than 1 mo., 3 yr. 1½ mo.			

The long duration of life is again noteworthy. One would scarcely have predicted an average life of over three years for two of these patients. In two cases reporting type of death, both were due to stroke. The cases included in this study show that the higher the systolic pressure, the more likelihood of death by cerebral accident.

TABLE VIII

Summary

Living, 100; Dead, 79

Living: M., 25; F., 75; Avg. age, 54.				
Hypertens. sympt. and signs on first observ.	None	Cerebral	Cardiac	Kidney
	25	52	38	12
Symptoms last report	35	37	40	36
Not reporting, 4				
Reporting recent BP, 58: increased, 23; decreased, 35.				
Dead, 69 (79): M., 35; F., 34; Avg. age, 60.				
Showing marked symptoms and signs first observ.	Cerebral	Cardiac	Kidney	
	22	40	15	
Type of death: cerebral, 19; cardiac, 24; kidney, 6; cerebral and cardiac, 1; cardiac and kidney, 7; cerebral, cardiac and kidney, 1.				
Not reporting, 6. Other causes, 5.				
Av. duration of life after first observ., 2 yr. 10 mo.				
Same excluding patient living less than 1 mo., 3 yr. 4 mo.				

The summary shows that in one hundred living patients, twenty-five had no symptoms when first seen and thirty-five on last report. Fifteen patients lost their cerebral symptoms, but cardiac symptoms showed a slight increase and there was a marked increase in kidney symptoms (nocturia). The nocturia is the most difficult symptom to get definite information on, and since it can be due to prostatic hypertrophy and other causes, its presence is difficult to interpret and evaluate. In replying to the questionnaire, the information obtained on such symptoms as morning headaches, dizziness, shortness of breath, pain in the chest after exertion and swelling in the legs was more reliable and specific. Usually the facts at hand made it quite obvious as to whether the patient had symptoms of the cerebral or cardiac types of hypertension.

Twenty-three or forty per cent of fifty-eight

cases reporting recent blood pressures show increased blood pressure; while thirty-five or sixty per cent show decreased blood pressure over a period of observation from four to nine years. This is a remarkably good showing. Out of seventy-nine patients known to be deceased, in ten the postal notation to this effect is the only information we have, five died of other causes, six gave date of death, but no information as to the manner of death, and in fifty-eight cases the death was directly attributed to hypertension.

The approximate percentages of the various types of death are as follows:

- Cerebral, 33 per cent.
- Cardiac, 41 per cent.
- Renal, 10 per cent.
- Cardiac and renal, 12 per cent.
- Cerebral and cardiac, 1.7 per cent.
- Cerebral, cardiac and renal, 1.7 per cent.

If all the cases are counted of the patients who have died, the duration of life after first observation is two years and ten months. If those living less than one month (the majority of these were seen in dying condition) are eliminated the duration of life is three years and four months.

TABLE IX
Hypertension Cases with Compensation

No.	Sex	Age	First Observ.	BP	Symptoms and Signs			Recent BP	Date	Symp. on last report		
					Cereb.	Heart	Urine			Cereb.	Hrt.	Kid.
1	M	60	4/23/21	150/92	++	0	0			0	0	0
2	F	40	9/ 7/22	155/90	0	+++	0	165/100		0	0	0
3	F	50	1/19/23	160/90	0	++	0	150/75	6/ 9/28	0	0	0
4	M	57	2/17/21	160/105	0	++	0	165/90		0	0	0
5	F	52	6/ 4/23	160/94	++	++	0			0	0	0
6	F	26	11/20/22	160/63	++	+	0			0	0	0
7	M	80	3/22/22	165/80	0	++	0	168/104	3/18/30	0	0	+
8	F	46	5/ 6/25	170/90	0	++	0			0	0	0
9	F	79	7/13/22	170/80	+++	0	0			0	+	+
10	M	40	6/25/25	178/100	++	++	0	180/110	10/28/28	0	0	0

Now has pernicious anemia with neurolog. complaints.

Table IX is made up from a group of selected patients with systolic blood pressure from 150-180 who have shown compensation or toleration for elevated blood pressure. By this is meant that the symptoms referable to hypertension present when the patient was first seen have disappeared. Outstanding in this group is pa-

tient number seven who, at present, is eighty-eight years old. His cardiac symptoms of eight years ago have disappeared, but now he has developed nocturia. Patient number eight likewise lost her cerebral symptoms, but developed cardiac and kidney symptoms.

TABLE X
Hypertension with Compensation

No.	Sex	Age	First Observ.	BP	Symptoms and Signs			Recent BP	Date	Symp. on last report		
					Cereb.	Heart	Urine			Cereb.	Hrt.	Kid.
1	F	62	6/ 2/20	180/85	++	+	0	170/95	5/ 2/28	0	0	0
2	F	67	12/ 6/21	180/100	++	+	0	182/80	4/ 7/28	0	0	0
3	M	49	1/ 9/25	184/120	0	++	0	153/120		0	0	0
4	F	61	11/21/19	190/120	++	0	0			0	0	0
5	F	50	3/18/22	190/118	++	++	+	194/128	4/ 2/30	0	0	0
6	F	66	11/30/21	210/90	++	+	0	172/120	1/20/29	0	0	0
7	M	58	5/26/16	210/110	+	0	+	196/96	5/16/30	0	0	0
8	F	53	11/16/20	220/130	+++	0	+			0	0	0
9	F	60	4/ 2/24	230/110	0	++	0			0	+	+
10	F	77	5/ 4/21	240/90	0	+++	0			0	0	+

(Sl. stroke 1 year ago. (Sl. albuminuria first observ.)

This is a second group of selected cases with initial blood pressure of 180 and above who have developed compensation. Outstanding in this group are patient number four who, eleven years ago, had a blood pressure of 190/120 with cerebral symptoms and now has no symptoms, and patient number five with a blood pressure of 190/118, cerebral and cardiac symptoms, albuminuria, and a P.S.P. of thirty-seven, who now has no symptoms, no albuminuria and a

P.S.P. of forty-nine per cent. Patient number seven, with a blood pressure of 210/110 fourteen years ago, with slight cerebral symptoms and albuminuria, is now free from symptoms and has a lower blood pressure. Patient number eight with marked cerebral symptoms and a blood pressure of 220/130 ten years ago, is now free from symptoms. Patient number ten, with marked cardiac symptoms has compensated as far as cardiac symptoms are concerned.

TABLE XI

No.	Sex	Age	First Observ.	BP	Symptoms and Signs			Recent BP	Date	Symp. on last report		
					Cereb.	Heart	Urine			Cereb.	Hrt.	Kid.
1	M	33	6/ 1/21	150/85	0	+	0			0	+	0
2	F	45	9/ 1/15	160/100	0	0	0	168/100	1/27/30	+	0	0
3	F	48	9/ 4/22	170/100	0	++	0	145/90	2/18/30	+	+	+
4	F	56	10/28/24	170/100	0	0	0	120/90	6/15/28	0	0	0
5	F	62	12/ 7/22	175/100	0	0	0	210/100	2/16/29	0	0	0
6	F	53	10/12/22	180/122	++	0	+	150/96	2/26/30			
7	F	46	4/24/22	190/110	+	0	+			Albuminuria 1+	first observ.	
8	F	43	5/18/21	190/120	+++	0	0	170/94	5/11/30	2+ Bu. N. 20	first observ.	
9	F	54	7/ 8/21	190/90	0	0	0					
10	M	55	3/13/25	190/120	0	+	0	135/80	4/ 4/30	0	0	0

In Tables XI, XII, and XIII are cases selected because they have pursued a favorable course for one reason or the other. Patient number one began with hypertension and cardiac symptoms at the age of thirty-three years, but at forty-two years of age he is as well as at thirty-three. Patient number two, at sixty years of age, has practically the same blood pressure as when forty-five, and has developed only slight cerebral symptoms.

Six years ago, patient number four had a blood pressure of 170/100 and four years later her blood pressure is 120/90. Patient number five,

eight years ago, had a blood pressure of 175/100 and one year ago it was 210/100. She is unaware of any symptoms due to hypertension.

Nine years ago patient number eight, at the age of forty-three years, had a blood pressure of 210/120, with marked cerebral symptoms. She now has a blood pressure of 170/94 with added marked cardiac hypertrophy and albuminuria. With marked cerebral symptoms and particularly a diastolic blood pressure of 120, one would hardly have predicted for her the rather favorable course she has pursued—a stroke would have been expected.

TABLE XII

No.	Sex	Age	First Observ.	BP	Symptoms and Signs			Recent BP	Date	Symp. on last report		
					Cereb.	Heart	Urine			Cereb.	Hrt.	Kid.
1	F	61	9/ 2/22	195/100	0	0	0	204/114	1/ 4/30	0	0	0
2	M	53	4/10/23	200/100	0	0	0	220/110	11/ 5/29	0	0	0
3	F	68	9/22/23	200/100	++	0	0	202/102	3/26/30	0	0	0
4	F	40	1/28/18	200/100	0	+	+++			0	+	0
5	F	44	12/15/25	202/114	+++	++	+++	218/110	3/ 5/29	0	0	0
6	F	69	10/ 3/21	210/120	0	0	++			+	+	+
7	F	68	5/12/25	210/120	++	+	+			+	+	0
8	F	45	7/31/18	210/110	+	+	0	298/160	2/ 6/30	+	+	+
9	F	56	3/ 3/18	212/110	+	0	0					
10	M	59	10/10/21	215/130	0	++	0	170/95	5/27/29	+	0	+

One time mark. Albuminuria and nitrogen retention. Chr. nephritis when first seen with unmistakable improvement. PSP 35 and 45. Almbubin. 2+, PSP 30%.

3+ albumin 1927. Marked enlarg. heart and aorta 1927.

No recent BP but alive and symptomless.

Patients number one and two are rather remarkable for having had high blood pressure with no symptoms, and now, after eight and seven years, respectively, have a slightly higher blood pressure, but are still symptomless.

Patients number four and five, twelve years ago, showed definite evidence of chronic nephritis with albuminuria and renal insufficiency. In patient number four, the evidence of chronic nephritis is now entirely lacking and in the second there is unmistakable improvement. I consider the course of these two patients as the most remarkable of all.

Patient number six, at the age of sixty-nine,

had a blood pressure of 210/120 with marked albuminuria and P.S.P. output of 35 and 45 on two different occasions. She is alive at 78.

Patient number eight, at 45 years of age, twelve years ago, had a blood pressure of 210/110. Now, at 57, it is 298/160. In 1927, she had a marked albuminuria and the greatest diffuse enlargement of the aorta that I have ever seen on fluoroscopic observation. It is almost unbelievable that within the last three years the tremendous strain has not caused the elastic fibers of the aorta to be sheared through, resulting in a slit in the wall. Nevertheless, this has not happened.

TABLE XIII

No.	Sex	Age	First Observ.	BP	Symptoms and Signs			Recent BP	Date	Symp. on last report		
					Cereb.	Heart	Urine			Cereb.	Hrt.	Kid.
1	F	60	4/24/23	235/130	+	+	0	190/110	3/ 8/30	+	+	+
2	F	65	2/ 4/25	240/112	0	0	0	250/140	4/15/30	0	0	0
3	F	31	8/16/20	250/130	+++	++	+			0	+	0
4	M	48	3/29/22	250/100	0	++	0	226/100	2/16/30	0	0	+
5	F	59	5/21/25	260/140	+++	++	0	230/120	3/23/30	+	+	0

Recent Stroke.

The five patients in this group are all unusual when the high level of hypertension is taken into account, and also the fact that they were seen from a minimum of five to a maximum of ten years ago. Two are entitled to special mention. Patient number two at the age of seventy is symptomless with a blood pressure of 250/140. Patient number three, with a blood pressure of 250/130, at the age of thirty-one, and with cerebral and cardiac symptoms, and albuminuria, is alive at forty-one, with only cardiac symptoms. She had all the earmarks of a severe progressive arterial hypertension with cerebral cardiac and renal involvement. It is regrettable that our records of her do not include an eye ground examination at the time. I believe the most conservative clinician, seeing this patient ten years ago, would not have thought she would be alive and in apparently better condition ten years later.

The material presented indicates, I believe, that hypertension is not necessarily accompanied by a progressive vascular lesion. In many cases the patient may have hypertension, but live a relatively symptomless life, as far as hypertension is concerned. What is even more gratifying is the fact that a fairly large group are able to develop a compensation, or toleration, for elevated blood pressure. In such instances the symptoms of hypertension which were present in the earlier stages of their malady disappear. This situa-

tion is particularly characteristic of patients with cerebral symptoms, but even cardiac symptoms disappear, and in some cases definite renal lesions that have produced a relative renal insufficiency make no progress.

Many individuals with a high blood pressure at the onset have a lowered blood pressure ten years later; while others, with what might be considered a dangerously high pressure, get along surprisingly well.

The data presented are obtained from individuals who were conscious of physical impairment to the degree that they sought medical advice. The report would probably be more favorable if it represented the population at large above 40 years of age.

I hope that I have been able to show you a favorable aspect of hypertension, and to make you feel that anything you can do to improve the status of the hypertensive individual is distinctly worthwhile, and that you will be able to transmit to him a hopeful outlook.

DISCUSSION

DR. W. H. BODENSTAB (Bismarck, N. D.): I am happy to greet Dr. Altnow again because we always consider him one of our own. I enjoyed his paper very much. The summary of his cases was very interesting and corresponds to a certain extent to our own experience. We know that hypertension is a clinical picture or disease, the etiology of which has not yet been determined. The statement that hypertension is only a symptom of something else is

probably true, but thus far no one has been able to find this "something else." The disease shows strong family tendencies and heredity plays a certain rôle in its etiology. However, when we find a high blood pressure in husband and wife, and in one or more members of the family, as frequently happens, we can not neglect the possibility of association, mode of living, and diet as contributing factors.

The prognosis of hypertension depends less upon the height of the blood pressure than on its effects upon certain organs. The effects upon the heart of increased blood pressure are most important since every hypertensive patient who escapes death from apoplexy, uremia or some intercurrent disease, will eventually succumb to heart failure. Hypertension is the cause of death in approximately 60 per cent of patients suffering from high blood pressure.

The age of the individual at the time the hypertension is discovered is an important consideration in the prognosis. The senile type in which diastolic pressure is normal or slightly elevated is compatible with long life, providing the cardiac and kidney functions are good, and these patients usually live to an advanced age. On the other hand, when hypertension develops before or during middle age, the pressure often is high and the progress of the disease more rapid.

The mortality varies in proportion to the degree of the diastolic pressure; the higher the diastolic pressure the higher the per cent of mortality.

Hypertension is more prevalent in women than in men, yet the percentage of mortality is higher in men than in women. Blackford, in a follow up study of hypertension in a series of over 400 cases with a systolic pressure over 175, has shown a gross mortality of 50 per cent in from five to eleven and one-half years. Sixty-five per cent of the hypertensive cases in this series were in women, but the mortality was only 39 per cent as compared with the mortality of 70 per cent in men in this same series. Fifty per cent of the patients examined were women.

The salient points in the prognosis of high blood pressure can briefly be summed up as follows: Unfavorable features are a family history of cardio-

vascular disorders, a relatively high diastolic pressure and, chiefly, evidence of degeneration in certain selected parts of the cardiovascular system. These evidences consist of marked arteriosclerotic changes in the cerebral, retinal, coronary, and renal arteries, and in the arch of the aorta.

Favorable features are high blood pressure in the absence of demonstrable organic cardiovascular changes, involvement of the larger rather than the smaller peripheral vessels, the coronary or the retinal arteries. This is particularly true of cases with normal diastolic pressure and those without albuminuria or glycosuria. And the last, but not the least, of the favorable features of hypertension lies in the advantage of being a female of the species.

DR. ALTNOW (closing): I am very glad to have Dr. Bodenstab bring out the high lights in hypertension, and agree with the points he has made.

It would be very interesting to reverse this study and approach it from the standpoint of diastolic pressure. It could easily be done with the data I have, and I think sometime I shall do it.

This is not a study in which there is much individualization. It is just following through the fortunes of a group of patients with hypertension. This morning, in thinking about hypertension, these things suggested themselves to me in regard to treatment:

First, be optimistic with the patient.

Second, the employment of measures directed at reducing hypertension are of doubtful value to the patient, since many of them compensate for their symptoms, and others lead a symptomless life with high blood pressure.

Third, we can do most for our patients by encouraging them to adopt a temperate and sane method of living.

Fourth, while overeating, with resulting overweight, and increased metabolic and circulatory work, especially overindulgence in proteins, is to be discouraged in all patients with high blood pressure, care must be taken that an error is not committed on the side of a too rigid dietary restriction, and the patient made manifestly worse because of failure of his nutrition.

MINNESOTA'S NEW DEATH CERTIFICATE

BY GLADYS G. CASADY

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MINNEAPOLIS, MINNESOTA

The medical portion of Minnesota's new death certificate which is now gradually being circulated throughout the state, was formulated with the hope of facilitating the physician's task of certifying definite, complete, and comprehensive

data concerning the cause of death. In this respect the old form was inadequate and misleading, the wording "Cause of Death" and "Contributory" having proved themselves ambiguous to a high degree. For example, one physician in-

interpreting "Cause of Death" to mean the immediate cause would set down "embolism of the mesenteric artery," and interpreting "Contributory" to mean the condition which brought about the immediate cause would logically enough set down under this caption, "ruptured gangrenous appendix." The State, however, intends and always has intended to be set down under "Cause of Death" the primary underlying condition which, in the case under discussion, is ruptured gangrenous appendix; and the State's intent and that of the United States Census Bureau concerning contributory cause, has been and is that here should be entered the immediate cause and all other conditions having a bearing on the death.

The new standard death certificate drawn up by the United States Census Bureau, and the one which all Registration States were requested to adopt, asks the physician to state first the "principal cause of death." But since there is a difference of opinion among medical men as to what constitutes the "principal" cause of death, the new standard form had little advantage over the old in clarifying the intent of the Census Bureau, and in eliminating one particular barrier in securing complete and definite mortality data. Hence it seemed to the Director of the Division of Vital Statistics, that since statistical authorities have always eagerly sought out the primary underlying cause of death, because in nearly every case, according to the universal rule of classification that is the one chosen for statistical record, the introductory phrase on the medical portion of the death certificate should be worded "The primary underlying cause of death was". Therefore, Minnesota's new form bears this pertinent introductory phrase, by which is meant the condition underlying the immediate or terminal condition and all other complications.

The immediate and contributory conditions are equally important, and they should appear with primary causes for the reason that a wealth of information can be obtained by showing their relationship, and the extent to which one disease is associated with another. Thus, if these data are faithfully set down, the logical trend of certain diseases will be represented. A second reason why contributory causes must be shown is that according to the international rule of classification, which for the sake of comparability of statistics must be followed, very severe, rare and infectious diseases, external causes and operations are given special weight. For example, should a diabetic condition be-

come complicated by an acute yellow atrophy of the liver, the acute yellow atrophy because of its severity determines the classification. Likewise, should a general arteriosclerosis be associated with coronary sclerosis and a terminal angina pectoris, angina pectoris is chosen for statistical record.

What we hope to be a second improvement on Minnesota's new form is the change in that portion given over for information concerning operations. Here should be entered the condition for the relief of which surgery was undertaken together with the date. This latter is significant, for it reveals whether or not death followed closely upon the operation, a fact which must be given consideration. But, strictly speaking, it is not the condition for the relief of which the operation was undertaken, but the findings revealed by the operation that are significant, since they may not be identical with the preoperative diagnosis. This is particularly true in the case of exploration. Hence a further improvement might have been made on the new form did it read at this point instead—state findings at operation. However, it is more than likely that the postoperative rather than the preoperative diagnosis will be entered in this space in spite of its somewhat ambiguous wording.

A third change on the form of which the medical profession will doubtless heartily approve, is the one affecting that ancient bone of contention "What test confirmed diagnosis?" Many a caustic remark, justly caustic, has filtered in to the State Department of Health covering this, hence its elimination on the Minnesota form.

11 DATE OF DEATH (month, day, and year) <u>July 7, 1930</u>	
12 I HEREBY CERTIFY, That I attended deceased from <u>June 23, 1928, to July 7, 1930</u>	
I last saw him alive on <u>July 7, 1930</u> ; death is said to have occurred on the date stated above, at <u>5:36 A.M.</u>	
The PRIMARY UNDERLYING CAUSE of death was	
<u>Accidental fall with comminuted fracture of left femur.</u>	Duration <u>10 Days</u>
Contributory causes of importance in order of onset:	
(1) <u>Thrombosis left femoral vein</u>	Duration <u>1 wk</u>
(2) <u>Pulmonary embolism</u>	
(3) <u>Congestion hemorrhage of lung</u>	
Did an operation precede death? <u>Yes</u>	
If so, state condition for which it was undertaken: <u>Reduction of fracture (Straussmann's pin inserted)</u>	
Date of operation: <u>7/3/30</u> Was there an autopsy? <u>Yes</u>	
13 If death was due to external cause (violence) fill in also the following: Accident, suicide, or homicide? <u>Accident</u> Date of injury: <u>6/23/30</u>	
Where did injury occur? <u>Street in marsh</u> (Specify site of town, county, and State)	
Specify whether injury occurred in industry, in home, or in public place.	
Industry: <u>Ball thrown from mine shaft</u>	
Manner of injury: <u>Comminuted fracture left femur</u>	
14 Was disease or injury in any way related to occupation of decedent? <u>Yes</u>	
If so, specify: <u>Mining Accident</u>	
(Signed) <u>J. C. Fairbank</u>	M. D.
(Approved) <u>Chilton</u>	

The above partial facsimile of the new form contains data fully illustrating the wants and

wishes of registration authorities. Every item entered is significant. This death would be charged to accidental fall except that reading the certificate through we find the fall occurred in a mine; hence the death is charged to a mining accident which may be further particularized by the specific kind of mining accident, a fall in a mine. The data concerning operation clarify the picture further, more firmly establishing the classification. Under Item 23 we find that this accident occurred in Stuntz Township, thus revealing it to be a rural and not an urban accident. Under Item 24 is space for data which, if faithfully entered, will throw some light upon the hazard of occupation, a thing about which at present practically nothing is known.

It must be remembered that mortality statis-

tics are an integral part of medical research, and that they are a useful and valuable instrument only as they approximate accuracy. That they have not approximated accuracy as much as they can and should is a fact frankly faced by the Division of Vital Statistics. It does not resolve, as did Don Quixote, that "this should pass to all intents and purposes for full and sufficient helmet." But it intends with a cool, objective eye to diligently search out all possible fallacies, hoping that by honestly facing them and by trying resolutely and patiently to correct them it may make the impossible at least half possible. And thus, through the greatest probability of attainment of truth in mortality statistics, set up a light which will illumine to some degree the path of that group of men who more than any other honor "the essential human law, the law of living and promoting life."

CHRONIC INFECTIONS OF THE NASAL ACCESSORY SINUSES*

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HOT SPRINGS, SOUTH DAKOTA

Dr. Hurd begins by calling attention to sinus infections as a fad among the laity and draws a comparison between the woman with an occupational neurosis and the phlegmatic individual with obstructed nasal breathing and profuse discharge.

Sinus infection may run from the latent types to the severest fatal infections. The author believes we should change our idea regarding the bacterial infection theory. He believes bacterial infection is always the end result. The primary derangement of the mucosa is due to (1) Vitamin Deficiency, (2) Allergia, or (3) Endocrine Imbalance.

Avitaminosis produces sinus mucous membrane changes favorable to bacterial invasion. Allergia produces an edema of mucous membrane which may become infected and progress to polypoid degeneration. Endocrine imbalance causes loss of mucous membrane tone and allows invasion of bacteria. Obtaining of complete relief therefore means not only surgery but finding of the underlying cause.

The greater incidence of sinus infection in

the winter time and among indoor workers is stressed. He mentions the temperature 67° to 72° degrees F. as being best. Efficiency rapidly decreases both below and above this temperature.

Mucosal changes in the middle turbinals are always present in ethmoiditis. The middle turbinal is part of the ethmoid bone and any labyrinth change will be noted in the mucous membrane. The turbinal will be paler and thickened and later will show a polypoid degeneration. Pus is more often absent than present.

In reaching a diagnosis the author advises using transillumination as an aid but also stresses the necessity of "well made" x-ray films which often will reveal pathology when it was not suspected from the history or clinical examination.

Treatment is discussed from the basis of surgery and underlying causes. Surgery advised is more or less the standard accepted methods and other treatment depends on etiology. He says allergic cases will never be cured by surgery unless the sensitizing agent is found and removed.

From 200 cases he had two thirds cured and one third improved. This, of course, is a good record of cures.

*Abstract of an article by Lee M. Hurd, M.D., Fifth Avenue Hospital, New York City.

CLINICAL PATHOLOGICAL CONFERENCE

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MINNEAPOLIS, MINNESOTA

The Department of Pathology of the University of Minnesota conducts a course in clinical pathologic conferences. Cases are selected in which a thorough clinical study has been made. The clinical data are given to the students in mimeographed form one week before the conference. The students study the clinical record and try to predict the postmortem findings. Many physicians have expressed interest in this type of study and therefore the Journal-Lancet is publishing a series of these conferences. The clinical data are taken from the hospital records and are given absolutely according to the data on the record. No signs, symptoms, or laboratory tests are given unless they appear on the chart, regardless of how important they may be in the diagnosis. If a clinical finding is entirely in error, it is omitted. Following the clinical report a summary of the pathologic findings is given and a few comments are made on interesting features of the case.

Readers may find it interesting to study the clinical report and arrive at a conclusion before consulting the postmortem report.

Autopsy—30—1572.

The case is that of a white man, age 49, who was admitted to hospital May 9, 1928, complaining of a cough beginning in the winter of 1926, pain in the left chest since January 1928, followed by pain in the right chest, loss of 45 lbs. in weight in the past two years, gradual weakness, and poor appetite for the past two months. He had rheumatic fever in his youth. His father died of Bright's disease.

Physical examination showed a far advanced pulmonary tuberculosis with cavitation in the left apex.

There was no change in one year; then the patient had a colitis, which healed with lamp treatment. The phrenic nerve was removed two years after admission. The sputum was positive during the first two years. The amount was one ounce a day. The sputum was negative after the phrenectomy.

The blood examination in October showed the hemoglobin to be 68 per cent; erythrocytes 4,000,000, and leucocytes 8,500. In 1928 the urine showed occasional leucocytes. The specific gravity ranged from 1010 to 1015. In 1929 there was albumin (faint trace to ++) present in the urine. The specific gravity ranged from 1010 to 1020. There were hyaline casts (occasional to many). In 1930 the albumin varied from a trace to +++ , with the specific gravity ranging from 1010 to 1022; there were occasional white blood cells, and once in a while a red blood cell; there were a few casts. The creatinin was five mg. and the urea nitrogen 65 mg. in October, 1930.

X-ray in 1928 showed extensive bilateral pulmonary tuberculosis with cavities. In 1929 x-ray showed probable tuberculous colitis (deformity of the cecum and dilation of the terminal ileum, spastic emptying). In 1930, x-ray showed less infiltration in the right lung. The left lung showed no change after the phrenectomy.

On October 9, 1930, the patient complained of headache. He had emesis of everything eaten. There was some burning pain in the left chest extending from the costal margin upward. On October 10 a note on the chart stated that the patient had not voided since "yesterday A. M." He had emesis, and the Ewald meal was negative. He did

not void all day. The bladder was not palpable. He was catheterized but no urine was obtained. On the eleventh he voided a very small quantity. He complained of headache and emesis. Blood pressure was 136/104. On the twelfth he was weak. There was no voiding. He had emesis. He was given fluids and an attempt was made to sweat him. The blood pressure was 146/104. On the thirteenth he was weaker. He retained some food. He did not void. He was given 500 c.c. of 5 per cent glucose intravenously. On the fourteenth, he voided 500 c.c. during the night. There was some emesis. The headache was relieved. The blood pressure was 160/104 A. M. and 138/98 P. M. He was given 500 c.c. of glucose intravenously. He seemed somewhat improved. On the sixteenth a note stated that the pain in the left chest was still present. The headache and emesis were not as marked as on the tenth.

On the seventeenth an eyegrounds examination showed tortuosity of the vessels. There was mild arteriosclerosis. On the eighteenth he complained of headache and pain in the right chest. He voided. On the nineteenth he was worse. He voided a very small amount. The pulse was weak. On the twentieth it was impossible to get the blood pressure. The pulse was weak. He had emesis. At 2:15 he was cyanosed and at 2:30 P. M. he died. The temperature ranged from normal to 100°.

Post-mortem report. Peritoneal cavity normal. Right pleural cavity obliterated by old adhesions; some old adhesions on the left side; no excess fluid. Heart, 505 grams; left ventricular hypertrophy; no valvular disease; no coronary disease. Left lung 244 grams; markedly collapsed; a number of small caseous tuberculous nodules; thrombosis of the left pulmonary artery and all of its larger branches. Right lung 570 grams; numerous firm tuberculous nodules; thrombosis of some of the small arteries in the lower lobe. Liver 1928 grams; amyloid infiltration. Spleen 264 grams; amyloid infiltration. Kidneys together 652 grams; extensive amyloid disease. Microscopic examination of the kidney shows extensive infiltration of the glomeruli and atrophy of the tubules. The histologic picture is consistent with uremia.

Diagnosis. Amyloid disease with uremia resulting from pulmonary tuberculosis.

Comment. Amyloid disease frequently results from chronic pulmonary tuberculosis with cavities. Frequently the patient dies of uremia from involvement of the kidneys, as in this case. In cases that terminate in uremia there is sometimes hypertension and cardiac hypertrophy, such as occurred in this instance. The pain in the left chest was evidently due to thrombosis of the pulmonary artery. Whether this thrombosis had any relation to the induced collapse of the lung is undetermined.

Autopsy—24—663.

A woman, 59, admitted to hospital October 6, 1924, in a semicomatose condition. About September 1 she began to have some indefinite gastric distress after eating. She began to belch gas, which relieved the pain. She became very particular about the food she ate. Food nauseated her but did not cause vomiting. She also had some headache at the beginning of the present trouble. For the past three weeks she had been gradually getting jaundiced. October 4 she became somewhat queer and the following day she was distinctly irrational and could not recognize her own people. She had no chills or fever. Her urine had been highly colored but no abnormal color of the stools had been noticed. There was no blood in the stools. She had never had any gastric symptoms.

Examination showed an extremely obese woman, weighing about 225 lbs. Her skin was deeply jaundiced. She was in a comatose state but there was no uremic odor on the breath. The lungs and heart were negative. The abdomen was pendulous. There was no mass. No organs palpable. There were reflexes present in the lower extremities. The reflexes were hyperactive in the upper extremities. Babinski present on the right.

Temperature on entrance was 98°; pulse 92; temperature and pulse never above normal.

Urine: amber; neutral; 1016; trace of albumin; negative sugar; numerous hyaline casts; occasional red blood cells and a few leucocytes. A large amount of bile pigments present. Blood: 90 per cent hemoglobin; 5,400,000 erythrocytes; 13,200 leucocytes; 88 per cent polymorphonuclears, 8 per cent small lymphocytes, 4 per cent large mononuclears.

Patient became comatose on October 7 and died the same day.

Postmortem report. The liver weighs 1100 grams. The parenchyma is of yellowish color and there are numerous dark red areas of atrophy. The gall bladder contains a whitish bile and several small calculi. The bile ducts are not dilated or obstructed. There is intense jaundice of all the viscera.

Diagnosis. Acute atrophy of the liver.

Comment. The liver decreases in size because of extensive necrosis of the parenchyma. The etiology of this disease is unknown. It is closely related to acute catarrhal jaundice and often shows a relatively slow development, as in this case.

SULPHEMOGLOBINEMIA

GEORGE A. HARROP, JR., and REGINAL L. WATERFIELD, Baltimore (*Journal A. M. A.*, Aug. 30, 1930), report ten cases of sulphhemoglobinemia. In all the cases sulphhemoglobin was found and confirmed by various tests; and in not one single case did they find so much as a trace of the allied pigment methemoglobin. The pigment of sulphhemoglobin was never found in the plasma, and it was found in the urine of only one patient, who had an incidental hematuria. These cases show the remarkable frequency of addiction to drugs containing aniline derivatives, and of habitual and severe headache and constipation in this disease. Only one of the first nine patients stated that he did not take aniline derivatives. Although for many years he had taken miscellaneous headache medicines (e. g., antikamnia), he had not taken anything except "aspirin" for four years. The acetylsalicylic acid he had taken in extremely large doses. Acetylsalicylic acid was continued but aniline derivatives were withheld, and his cyanosis gradually disappeared. The remaining eight patients had all been taking large doses of acetanilid over long periods, and seven of them had been taking the acetanilid in the form of "Bromo-Seltzer," the dose of which varied from "three or four doses a day" to "two or three 30-cent bottles a day." Habitual and extreme headaches were common to all the nine patients. In most of them, these had started in youth and increased in severity through life. Of the nine patients, six had suffered ever since childhood with chronic constipation of extreme degree. In practically all of them there was noticed a definite relation between the constipation and the headache. Emotional instability was a striking feature in all the first nine cases and was probably mainly a manifestation of the drug addiction. The tenth patient had not been habitually constipated, nor was she a martyr to chronic headaches or the drug habit. Emotionally she was normal. Briefly, she had worked three months out of each year for the last four years in a cotton mill with aniline dyes, which smelled strongly of hydrogen sulphide and deeply stained her hands. She had had three previous acute attacks similar to the present one though less severe, each occurring during the period she was at work. They consisted of violent and continual vomiting, with intense headaches, definite mental manifestations, and blueness of the lips and nail beds. In the last attack the cyanosis of the lips and nail beds was extreme. Following the onset of this last attack, after she had begun to become blue, she started taking "headache powders" and had continued with them for three weeks before admission. Examination of the dye showed that it smelled strongly of hydrogen sulphide and that it liberated large quantities of that gas when treated with acid. In all these cases, on the exclusion of aniline derivatives and allowing only such drugs as the salicylates, acetylsalicylic acid and codeine, the cyanosis underwent a very gradual but definite subsidence. Experiments on splenectomized dogs demonstrate that, at least in these animals, there is one way of producing a true "enterogenous cyanosis."

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana

The Official Journal of the
North Dakota and South Dakota State Medical Associations

The Hennepin County Medical Society

The Minnesota Academy of Medicine

The Soo Railway Surgical Association
and The Sioux Valley Medical Association

MINNEAPOLIS, DECEMBER 15, 1930

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ANNOUNCEMENT

Because of our desire to have the Sixtieth Anniversary Number of THE JOURNAL-LANCET complete and vitally interesting, and because some of the contributors to this special number have requested more time for research work on their particular subjects, it has been deemed advisable to publish the Sixtieth Anniversary Number of THE JOURNAL-LANCET on February 1, instead of January 1. We feel sure that this additional time we are being allowed will be reflected in the quality and completeness of this noteworthy issue.

PUBLISHER

CHRISTMAS SEAL HISTORY

The idea of selling seals or stamps is not as new as many are inclined to believe. In 1862 a group of women established miniature post-offices and by 1864 had raised more than a million dollars for the care of soldiers in northern hospitals through the sale of the charity stamp. The stamp idea was revived in 1892 in Portugal. In 1903 a Danish postal official interested his Government in selling a Christmas Seal for the purpose of establishing a tuberculosis sanitarium for children. The idea was sound and spread to other Scandinavian countries and later to various parts of the world. Only four years after the first seal sale in Denmark Jacob Riis and Emily Bissell presented the idea in America, and put on a sale of Christmas seals to aid in the support of a tuberculosis sanatorium in Wilmington, Delaware. The sale brought the institution some \$3,000. Miss Bissell's efforts were so rewarded that she was able to persuade the American Red Cross to put on a national campaign for the sale of Red Cross Christmas Seals in 1908. That year \$135,000, the next year \$200,000 was raised. Since 1910 the Christmas Seal Sale has been under the management of the National Tuberculosis Association. The Red Cross manifested a wonderful spirit in allowing the National Tuberculosis Association to become its agent, and allowing the Tuberculosis Association to use its emblem and its name. In the ten years that followed tremendous impetus was given the Christmas Seal idea. In 1920 it was agreed that the National Tuberculosis Association should establish its own seal. Since that time the seals have not been known as Red Cross Christmas Seals, but as Tuberculosis Christmas Seals.

Through the sale of Christmas seals money

has been obtained to organize a state tuberculosis association in every state of the Union. Organizations within states have been effected until there are existing over fourteen hundred local tuberculosis associations and committees.

Through the splendid educational work of the seal sale the public of this country is probably better informed on tuberculosis than on any other disease which attacks the human body. Tuberculosis still is a major disease. We speak of it as being on the decline, which is true. While as a general cause of death it is now surpassed by several other disease conditions, it still is the leading cause of death in this country among people between the ages of fifteen and forty years. In all the history of tuberculosis work there has never been a time when the opportunities to reduce tuberculosis to a minor place in the causes of death were so great. We now know how to control tuberculosis, but we are opposed at every hand by those who are not informed and by those misguided persons who do not believe in any good health work. Therefore, much educational work is necessary. The control of tuberculosis is also handicapped by lack of funds. Our best method at present of raising funds is through the sale of the Tuberculosis Christmas Seal.

PAUL H. FESLER

The large number of friends of Paul H. Fesler in the medical and closely allied professions are agreed that his election to the presidency of the American Hospital Association was well merited.

He was born in Stanberry, Missouri, in 1890. After attending the schools of Kansas City, Kansas, and Oklahoma City, Oklahoma, he entered the Epworth University of Oklahoma City and later attended the Marion Normal College of Indiana. After spending two years as a stenographer and court reporter on the Board of Equalization of the State of Oklahoma, Mr. Fesler, in 1914, became the secretary to the University of Oklahoma School of Medicine. In 1915 he was appointed superintendent of the Hospital, University of Oklahoma. He continued in this capacity until 1927. The Oklahoma Hospital Association recognized his worth and elected him secretary in 1918. He held this position until 1926 when he was elected president of that Association. When the University of Minnesota was in need of a superintendent of its hospitals a careful search was made for a



DR. PAUL H. FESLER

man well qualified to act in this capacity. After numerous interviews with various workers Mr. Fesler received the appointment. Time has proved that the choice was an exceedingly wise one.

Mr. Fesler's interests are not confined to the institution of which he is superintendent; they extend much further. In fact, he has a vision of bringing about better hospital conditions for the entire nation. His keen interest in crippled children and his sympathetic attitude toward all ill people has aided tremendously in his work. He is a man who sees the problems of physicians, not only those who are employed on a full time basis in institutional work, but also those engaged in every phase of medical work. He has an unusually good understanding of the physician in private practice and attempts to cooperate with him in every possible way. All of this together with his splendid executive ability have given the physicians of Minnesota great confidence in him. The members of the Minne-

sota Hospital Association also expressed their supreme confidence in him by electing him to the presidency of their organization in 1929.

The Editorial Board of THE JOURNAL-LANCET desires to congratulate those in charge of the Medical School of the University upon the selection of a man to serve as superintendent of its hospitals who is highly trained in hospital management, who is sympathetic and understanding when dealing with patients, physicians and all others in closely allied fields, and whose activities have caused him to merit the highest position the American Hospital Association can bestow.

DEATH OF DR. THEODORE BRATRUD

We all are very sorry to hear of the death of Dr. Theodore Bratrud of Warren, Minn. We all know him for his great work. He was a man who was well posted in every branch of medicine, and particularly surgery.

He was a member of the Minnesota Academy of Medicine, American College of Surgery, American Medical Association, State Medical Society and the Minneapolis Athletic Club. Everyone in Northern Minnesota will miss Dr. Bratrud, will miss the opportunity of calling him in. He had a quiet, gentle way with him and was universally liked for this as well as many other traits. We knew him as a very companionable man and we admired him for his art of surgery and medicine. We always found it very interesting to hear him discuss a paper read before a society meeting. We know that he will be missed in many parts of the country, by all the societies to which he belonged. Particularly will he be missed in Warren and surrounding towns. We feel that there has been a decimation of good medical men recently.

NEWS ITEMS

Miss Zella Bradford has been appointed chief nurse of the United States Veterans Hospital at Fargo.

Dr. J. A. Fowlie, formerly located at Portal, N. D., is now associated with Dr. J. L. Devine, at Minot.

Dr. J. J. Ederer, Thief River Falls, Minn., has opened offices at Red Lake Falls for general practice.

Dr. E. A. Croat, one of the early pioneer surgeons at Minot, N. D., died recently at San Diego, California.

Dr. J. Van Houten, Valley City, N. D., is the owner of one of the best herds of Holstein cattle in that state.

Dr. H. B. Beeson, Grand Forks, has moved to Colorado Springs, where he has opened offices for general practice.

Dr. A. O. Lenz, formerly of Hutchinson, Minn., has moved to Franklin, Minn., where he will continue practice.

The practice of the late Dr. T. B. Smiley, Mt. Vernon, S. D., has been sold to Dr. S. T. Herschkowitz of St. Paul.

Dr. R. W. Meadows, New Rockford, N. D., has moved to Carrington, N. D., and will continue in general practice.

Dr. W. P. Nordman has moved from Minneapolis to Mora, Minn., where he has opened offices for general practice.

Dr. B. H. Sprague formerly located at Huron, S. D., on the surgical service of the Huron Clinic, has moved to Sioux City, Iowa.

Dr. W. A. Chamberlin, Waseca, Minn., died recently at the age of 75 years. He was a graduate of Rush Medical College, Chicago.

Twenty-seven million Christmas seals have been sent out to all sections of Minnesota to be sold to carry on the fight against tuberculosis.

Dr. J. A. Meyers, Minneapolis, delivered an address before the members of the Stearns County, Minn., Public Health Association last month at St. Cloud.

Dr. H. W. Cook, Minneapolis, delivered a very interesting talk recently before the Business Men's Association of that city his subject being "Your Health."

Dr. B. F. Betelheim, Spearfish, S. D., has recently been elected to the State legislature for the third time. He is now a candidate for speaker of the house.

Dr. James Grassick, one of the Deans of the medical profession of North Dakota and a resident at Grand Forks, was a caller at THE JOURNAL-LANCET office.

Dr. D. M. Berkman, Rochester, Minn., has been elected president of the Olmsted County

Medical Society; Dr. A. B. Evarts, vice president and Dr. M. C. Piper, secretary.

Dr. J. D. Camp, Rochester, Minn., was among the leading speakers on the program of the annual meeting of the Radiological Society of North America at Los Angeles this month.

Dr. E. O. Steeves, Rugby, N. D., has decided to remain at home this winter and continue his general practice, his health being greatly improved. He has given up his southern vacation.

Dr. E. A. Meyerding, St. Paul, executive secretary of the Minnesota Public Health Association, made an address on "Public Relations" at the Red River Medical Society at Crookston this month.

Dr. H. E. Drill, who has been connected with Hamline Minn., University, as a coach of the athletic department, has returned to Battle Lake and will specialize in diseases of the eye, ear and nose.

At the annual meeting of the Steele County (Minn.) Medical Society held at Owatonna this month, Dr. E. J. Nelson, Owatonna, was elected president, Dr. J. A. McIntyre, Owatonna, vice president, Dr. A. B. Hart, Owatonna, secretary, and Dr. J. F. Smersh, Owatonna, treasurer.

A new medical society has been organized at Hibbing, Minn., nearly all of the physicians and surgeons of the Mesaba range being members. Dr. H. E. Binet, Grand Rapids, is president; Dr. C. W. Moore, Eveleth, and Dr. C. W. Bray, Biwabik, vice presidents; Dr. Fred McK. Ruby, Hibbing, secretary-treasurer.

The Cass County Medical Society met in regular session at the Chamber of Commerce, Fargo, Friday November 28th. The meeting was addressed by Dr. R. E. Weible, of Fargo, on "Peptic Ulcer" illustrated with lantern slides. The subject was presented in an excellent manner and elicited a free discussion by other members of the Society.

The final 1930 meeting of the Black Hills Medical Society was held last month at Rapid City, S. D. Dr. Percy D. Peabody, Webster, president of the State Medical Society, was a guest of the society. The program includes a motion picture film, "Surgical Treatment of Peptic Ulcer"; a short talk on post-operative treatment of peptic ulcer, and a general discussion of treatments for ulcer.

The Minnesota State Board of Medical Examiners revoked the massage license of Olga Stenhoff formerly residing at Minneapolis. The defendant was convicted on her plea of guilty to the charge of abortion on the third day of October, 1930, in the District Court of Hennepin County. At that time the defendant was sentenced to serve not to exceed two years in the Women's Reformatory at Shakopee, where she is now imprisoned.

The Minnesota State Medical Association broadcasts weekly at 11:15 o'clock every Wednesday morning over Station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters). Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. The program for the month of January will be as follows: January 7, "Carbon Monoxide Poisoning." January 14, "Peanut Bronchitis." January 21, "Cause of the Common Cold." January 28, "Cancer of the Breast."

The annual meeting of the Minnesota Academy of Medicine was held at the Country Club, St. Paul, on December 10. Officers for the new year are Dr. James Gilfillan, St. Paul, president. Dr. J. C. Litzenberg, Minneapolis, vice president, and Dr. R. T. LaVake, Minneapolis, secretary-treasurer. After a fine dinner was served, the following program was presented: "Acute Mechanical Obstruction of the Lower Bowel;" with an analysis of 36 personal cases, by Dr. James A. Johnson, Minneapolis.

The annual sale of Christmas seals, which finance a nation wide program of health education and disease prevention, was started in Minneapolis on December 1, when 66,000 letters containing the bright red and green health stickers were delivered throughout the city. The sale will be continued at postoffice stations until Christmas day. "A quota of \$53,000 has been set as a minimum goal for Minneapolis and Hennepin County," by Dr. N. O. Pierce, President of the Hennepin County Tuberculosis Association. The money will be used to finance, during 1931, the varied activities of the Association, which include the maintenance of early accessible clinics where free examinations were given last year to 869 adults; provision for an adequate system of rural school medical examinations offering services to 11,000 rural school children; the maintenance of a boarding home where discharged tuberculosis patients can live without cost while they are being retained

for self support; an employment service for discharged patients; year around program of education in health and a contribution to the fund for a national research program.

L. Schmidt of the Public School Board at Meadow Lands, Minn., entered a plea of guilty before Judge Fesler of the District Court of Duluth, to a charge of practicing healing without a Basic Science Certificate. The defendant has persisted for the past three years in treating people in that vicinity for various ailments. He is not a medical man but apparently possessed some peculiar complex in reference to the practicing of healing. He had been previously warned on two occasions but continued to remain in the business. Mr. Brist, representing the State Board of Medical Examiners reports finding various medicinal preparations including chloroform and ether in his possession, besides a stethoscope, thermometer, artery forceps and other surgical instruments. Judge Fesler sentenced the defendant to pay a fine of \$500 or three months on the St. Louis County Works Farm. The Court stayed the sentence until the further order of the Court. Judge Fesler warned Schmidt that any attempt on his part to practice healing in any way, shape or manner in the future would result in the payment of the fine and serving of the jail sentence.

ASBESTOSIS BODIES IN SPUTUM AND LUNG

KENNETH M. LYNCH and W. ATMAR SMITH, Charleston, S. C. (*Journal A. M. A.*, Aug. 30, 1930), report a number of cases. An autopsy was performed on a man who had been a worker in an asbestos mill, for twenty-eight months during a period of about three years. There was nothing of significance beyond the gunshot wounds of the chest and abdomen. In microscopic examination of the tissues, however, peculiar bodies were found in the sections from both lungs, in alveoli, associated with fine black granular pigment and mononuclear cells, some being intimately associated with large mononuclear phagocytes, in the bronchioles, where there was also the black granular material and some mononuclears, in the alveolar walls, which were thickened, and within the connective tissues of the interlobular areas along the course of vessels and bronchi. Here there was a definite increase of fibrous tissue and much accumulation of black granular pigment. At about the same time occurred another autopsy on a man who was working in an asbestos mill at the time of development of lobar pneumonia from which he died. He had been in this occupation almost continuously for a period of

four and one-half years. In this case, also, it was in the microscopic study of the tissues from the autopsy that the asbestos was discovered, gross examination revealing only massive pneumonia of the whole right lung and of the upper left lobe. Sections of all parts of the lungs from this case revealed the "asbestosis" bodies. There were great numbers of them in the alveoli, the walls of the alveoli, the deeper pleural tissues, the bronchi and the interlobular framework tissues, and they even occurred in thrombi of veins and in the peribronchial lymph nodes. Associated with them was much black granular pigment, in the alveoli, interstitial tissues and lymph nodes, and in these nodes was also a heavy deposit of yellow-brown granular substance of the same color as the asbestosis bodies. Mononuclear and polynuclear giant cell phagocytes were prominent in intimate connection with the asbestosis bodies in the alveoli, bronchi and veins. They contained much of the black granular material in the alveoli and bronchi, also. In the walls of the alveoli and bronchi and in the framework structures where these bodies lay was a cellular increase in fibrous tissue. The peculiar bodies in the lungs of these two patients were first suspected of being mycelia and spores of a fungus, possibly *Aspergillus*. Later identification was established. Asbestosis bodies were readily found in direct wet slight preparations and in large numbers in the sodium hydroxide digest concentrate of the sputum of a man who had active fibrocaceous tuberculosis and also a moderate grade of pneumoconiosis. He had not worked in asbestos for approximately a year but had been previously so occupied for about ten years. Asbestosis bodies were found in the sputum of two other asbestos workers. A woman who had worked in an asbestos factory from 1918 to 1924, but not since, had no evidence of pulmonary disease but was under treatment for syphilis. None of the asbestosis bodies were found in direct unconcentrated wet preparation. In the sodium hydroxide digest concentrate they were sparse and were not as long as those found in the first case. The sputum was mucopurulent. A third patient had not worked in asbestos for approximately two years. He had active fibrocaceous tuberculosis of the lungs, with tubercle bacilli in the sputum but no condition distinguishable as pneumoconiosis. No asbestosis bodies were found in direct wet unconcentrated preparations. A few asbestosis bodies found in the sodium hydroxide digest concentrate but none in the unconcentrated preparations. These sparse bodies were usually small, but some were long and thick. The fourth sputum examination was done in the case of a white man who had worked in an asbestos factory for about fourteen years but not since 1926. He had advanced fibrosis of the lungs, thought to be a late stage of pneumoconiosis, without any evidence of tuberculosis, and was in a state of advancing cardiac failure. Examination of sputum on three separate occasions by both direct and concentrated preparation failed to reveal any asbestosis bodies. The asbestosis bodies are quite variable in size, color and form but generally are of a characteristic structure. In the sputum, from

which they may be better studied alone, they have a central filament of a transparent, slightly greenish tinged needle-like crystal. This is taken to be an asbestos crystal. On this filament is deposited, in varying quantity, nodules, blobs and segments of a homogeneous refractive substance, varying from a shining light yellow or greenish-yellow to a deep mahogany brown, depending on the thickness of the deposit. In general this deposit occurs more on the extremities, usually in a spherical blob here, tapering toward the middle of the filament, which may be bare, giving the appearance of two clubs or baseball bats placed small end to small end. Again there may be a ball of the deposit on the extremities and the shaft have a cylindrical deposit of segments or disks of uniform or irregular size, giving the whole body the appearance of a dumb-bell. The clubbed form may break in the middle, leaving two indian-club forms. Again, the shaft and extremities may be the seat of more or less symmetrical deposits of globules, piled up, to give a variety of architectural figures. The segment or disks of deposit along the crystal filament may be pressed closely together or they may be separated by an interval at which the needle-like central crystal may be seen. Sometimes the shaft is covered by a homogeneous nonsegmented deposit. In the lungs they are of the same forms, but their full length may not be seen and they usually appear shorter. Asbestosis bodies do not take the ordinary tissue and sputum dyes and they have been found in their natural form in one of these cases in slide preparations of sputum stained by the ordinary carbolfuchsin method for tubercle bacilli. They may be stained on the slide by the Prussian blue reaction for iron, the heavier and darker brown bodies taking a deep indigo blue, this shading to a lighter color in proportion to the heaviness and darkness of the yellow-brown substance. This reaction indicates a considerable iron content to the deposit. It is suggested that the iron content, if not the whole substance of the deposit, is of tissue origin, probably from the blood.

CLASSIFIED ADVERTISEMENTS

Wanted

Physician to do Locum Tenens for January and February. Everything furnished. Address 783, care of this office.

For Sale

Hanovia Luxor Quartz light. Used only a few hours. Original price \$315.00, for cash \$150.00. Address 778, care of this office.

For Sale

Practice in Eastern South Dakota. Home and office equipment for sale. Well worth looking into. Address 775, care of this office.

For Sale

Unopposed practice in S. E. Minnesota, in good town of 500 population. Cash income between \$5,000 and \$6,000. A money maker from the start. Small investment. Address 787, care of this office.

For Sale

New Fischer Galvanic current generator, model 1200, complete, \$75.00. Universal Ophthalmometer, about like new, \$75.00. Address 784, care of this office.

Wanted

Recent graduate to assist in general practice with group of physicians, in Minnesota. Salary basis to start. If satisfactory will consider affiliation. Address 786, care of this office.

Wanted

A first class Eye, Ear, Nose and Throat specialist to become associated with a group of physicians in Minneapolis. Overhead expenses on percentage basis. State age and place of special training. Address 782, care of this office.

Position Wanted

Woman x-ray technician, age 29, completed nine months training in x-ray technique and four months hospital emergency experience at General Hospital, Minneapolis. Address 785, care of this office.

Locum Tenens Available

Recent graduate of University of Minnesota, one year of private practice. Ability, personality, appearance and character will satisfy the most critical. Will also consider permanent location. Address 777, care of this office.

For Sale

Stock, including Hanovia Sun Lamps, Diathermy, Surgical Instruments, Microscopes and other equipment for sale at a sacrifice. Sophia Hein, Executrix, estate of Frederick Hein. Address 219, S. Lexington Ave., St. Paul.

For Sale

Practice in central Minnesota, in richest farming community, without a crop failure. Nearly all gravel roads. Collections 95 per cent. Home and office fixtures for sale. Some cash required, balance on easy terms. Scandinavian preferred. Good reason for selling. Address 781, care of this office.

Attention Eye and Ear Specialists

Having retired from practice, will sell my equipment of instruments, including Microscope, 3000 power, complete box case of operating instruments for diseases and deformities of the Eye, Ear, Nose and Throat, very cheap. All sterilized up to date, plated and ready. Phone Kenwood 0474, or address 2639 Humboldt Ave. So., Minneapolis.

For Sale

General practice in modern North Dakota town. Large farming territory, 20 to 30 miles to nearest physician. Best schools and churches. All lines of business represented. Good drug store. Completely equipped office and five bed emergency hospital managed by nurse. Would like to dispose of office equipment and building. Part cash and easy terms. Unable to continue on account of loss of arm through accident. Address Dr. C. A. Wicklund, Wildrose, N. D.

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